

**EXHIBIT A – PART 1**

ORDNANCE SYSTEMS INC.  
4509 WEST STONE DRIVE  
KINGSPORT TN  
37660-9382 USA

PURCHASE ORDER NO: **ELP-100815-01**  
PO REV DATE: 11/30/2015

To expedite payment, include the purchase order on your invoice and email to [osiaccountspayable@baesystems.com](mailto:osiaccountspayable@baesystems.com)

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PO REV: 4

ORIGINAL PO DATE: 10/21/2015

CONTRACT NUMBER:

CONTACT: JIM JONES 571-289-8050

VENDOR ID: FLU001  
FLUOR FEDERAL SOLUTIONS, LLC  
100 FLOUR DANIEL DRIVE  
GREENVILLE SC  
29607-2770 USA

SHIP TO: BAE SYSTEMS, ORDNANCE SYST INC  
ATTN: RECEIVING DEPT  
4050 PEPPERS FERRY RD  
RADFORD VA  
24141 USA

TRANSPORT VIA: VT

TAX EXEMPT NUMBER:

FOB POINT: DESTINATION

PAYMENT TERMS: NET 30 DAYS

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								US DOLLARS	
ITEM/ LN#	DESCRIPTION	UM	REV	ORDER QUANTITY	BALANCE DUE	PROMISED DOCK	UNIT PRICE	EXTENDED PRICE	T X
001	2 0700 20046 56735	EA		3889394	3889394	04/30/2016	1.00	3,889,394.00	N
CLIN 1 OPTION 1 STEEL PURCHASE, TEC AND GCS FOR OPTION1									
002	2 0700 20046 56735	EA		5442282	5442282	04/30/2016	1.00	5,442,282.00	N
CLIN 1 OPTION 2 ENGINEERING COST ZAPATA									
003	2 0700 20046 56735	EA		4423385	4423385	04/30/2016	1.00	4,423,385.00	N
CLN 1 OPTION 4 ELECTRICAL MATERIAL PURCHASE									
004	2 0700 20046 56735	EA		4756680	4756680	04/30/2016	1.00	4,756,680.00	N
OPTION 2 CLIN 2 TRAIN 1									
005	2 0700 20046 56735	EA		1947635	1947635	04/30/2016	1.00	1,947,635.00	N
CLIN 1, OPTION 3A LABOR									
006	2 0700 20046 56735	EA		1325878	1325878	04/30/2016	1.00	1,325,878.00	N
CLIN 2, OPTION 1 A-LABOR & HEAT EXCHANGERS									
007	2 0700 20046 56735	EA		87078	87078	04/30/2016	1.00	87,078.00	N
CLIN 3, OPTION 1 A MUSTANG (500 HOURS)									
008	2-0700 20046 56735	EA		10014314	10014314	04/30/2016	1.00	10,014,314.00	N
CLIN 3 OPT. 1D DESIGN ENGINEERING									

Subcontract Description on Page 3



This Firm Fixed Price Subcontract Agreement is issued for efforts in support of the New Nitrocellulose Facility and incorporates funding provided by the UCA and subsequent modifications prior to definitizing the subcontract agreement. The potential ceiling value of the agreement is \$245,690,422 and the funded value of the above options is \$31,886,646. Modifications to Milestones/Options shall be handled in accordance with FAR 52.243-1, Changes - Fixed Price. Deletion of Milestones/Options are a partial termination subject to FAR 52.249-2, Termination for Convenience. Should milestones not be funded in accordance with the milestone schedule, causing Subcontractor to experience cost increase and/or delay of work progress, Subcontractor may request an equitable adjustment to the contract value.. The Parties may exercise the Options upon the Customer's approval and funding for each Option. If the Options for Train 2 are not funded/executed by 31 JULY 2016, then Subcontractor may reserve the right to propose changes for cost impact. The Subcontractor is required to send notification to BAE Systems when the available funding is 75% expended.

ACKNOWLEDGED BY:



DATE: 12/16/2015

TOTAL EXTENDED AMOUNT

AUTHORIZED BY: BUYER ELP

THIS PURCHASE ORDER **31,886,646.00**

**BAE SYSTEMS**

By performing the above referenced work or by acknowledging receipt of this order or by performing any of the above work you agree to the terms and conditions set forth herein. These terms and conditions constitute an offer by the Corporation and said offer is expressly limited to acceptance on the exact terms set forth and no other terms and conditions shall be controlling; and these terms and conditions supersede the terms and conditions of your proposal or acknowledgement form, if any. The ACCEPTANCE COPY of this Contract shall be signed and promptly returned.

This order is accepted by vendor subject to all terms and conditions as stated herein.

**BAE SYSTEMS ORDNANCE SYSTEMS INC.    FLUOR FEDERAL SOLUTIONS, LLC**

Accepted by

Joseph T. Senftle

Name Joseph Senftle

Title: Vice President/General Manager

Date: 12/17/2015

Accepted by:

Bruce Stanski

Name: Bruce Stanski

Title: President

Date: 12/16/2015



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**PART 2 – SUPPLEMENTAL TERMS & CONDITIONS**

**WHEREAS**, BAE Systems has been awarded Prime Contract Number W52P1J-11-G-0002, with the United States Government, as represented by Island Contracting Center (hereinafter, the "Customer", to perform the work defined in the Statement of Work; and

**WHEREAS**, in furtherance of the W52P1J-11-G-0002/Task Order 002, BAE Systems intends to acquire from SUBCONTRACTOR for and on behalf of the Customer such supplies and services as described in this Agreement and its attachments; and

**WHEREAS**, this Agreement represents the definitive contract authorization to SUBCONTRACTOR to initiate performance of the work described in this Agreement and its attachments;

**WHEREAS**, SUBCONTRACTOR wishes to provide BAE Systems the said work as set forth herein; and

NOW THEREFORE, in consideration of the premises and mutual agreements hereinafter set forth, the Parties to this Agreement mutually agree as follows:

**2.1 DEFINITIONS**

Throughout this document, the following terms are defined as:

**"Agreement"** means this executed Subcontract between BAE Systems Ordnance Systems Inc., (hereinafter also known as "BAE Systems", "Contractor", "Prime Contractor" or "Buyer") and Subcontractor (hereinafter also known as "Subcontractor", "Subcontractor", or "Vendor").

**"Buyer or Contractor"** means BAE Systems; the Party purchasing the supplies/services.

**"Buyer's Subcontract Representative"** means Subcontracts Administrator/Purchasing Agent or such employee of the Buyer, as the Subcontractor has received notice from the Buyer, as having authority to act for and in behalf of the Buyer.

**"Contracting Officer"** means the person having cognizance on behalf of the Government of the Prime Contract and any officer or civilian employee of the Government who is properly designated as the Contracting Officer of the Procuring Agency. The term includes, except as otherwise provided in this Subcontract, any authorized representative of such Contracting Officer acting within the limits of his authority.

**"Contractor or Prime Contractor"** means BAE Systems.

**"Engineering Change Proposal (ECP)"**: A proposal to the responsible authority recommending that a change to an original item of equipment be considered, and the design or engineering change be incorporated into the article to modify, add to, delete, or supersede original parts that are initiated by BAE. This is not going to be considered a Value Engineering Change but handled through the change order process

**"FAR"** means the Federal Acquisition Regulation.

**"Government"** means the United States of America or any department or agency thereof.

**"Party"** and **"Parties"** means BAE Systems and/or the Subcontractor or both.

**"Procuring Agency"** means the department of the Government having cognizance of the prime contract.

**"Provision"** means any part of this subcontract or attachment thereto including, but not limited to, any referenced or incorporated agreement, specifications, documentation or data, or any articles/clause(s) or part(s) or combination(s) thereof.

**"Seller, Subcontractor or Vendor"** means the Party that had entered into this Subcontract with the Buyer.

**"Subcontract"** means this executed contractual agreement between Buyer and Subcontractor listing supplies/services to be furnished and the consideration therefore. It includes amendments, modifications, change orders, together with all attachments and exhibits thereto.

**"TO" or "TOs"** mean Task Order or Task Orders.

**"Value Engineering (VE)"**: VE is a functional analysis methodology that identifies and selects the best value alternative for designs, materials, processes, systems, and program documentation. VE applies to hardware and software; development, production, and manufacturing; specifications, standards, contract

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requirements, and other acquisition program documentation; facilities design and construction; and management or organizational systems and processes to improve the resulting product.

**“Value Engineering Change Proposal (VECP)”**: Submitted by the contractor for review as to its Value Engineering (VE) applicability. If accepted by the government, normally the contractor is compensated for saving the government money. The cost savings ratio shall be 60% Contractor 40% Subcontractor

## 2.2 ADMINISTRATIVE MATTERS OF AUTHORITY

- a. Any notices or communication pertaining to this Subcontract originated by either Party shall be sent to the other by U.S. mail, other electronic means such as email, or an independent delivery service providing a receipt of delivery. Unless otherwise specified in writing, the addresses, phone number, e-mail address, of the parties hereto for the purpose of any such notice or communications shall be:
- b. BAE Systems' Contractual and Technical POCs are as follows:

**BAE Systems Contractual**  
 Name: Erin Phalen  
 Title: Subcontract Administrator  
 Address: Radford Army Ammunition Plant  
 PO Box 1, State Route 114  
 Radford, VA 24141  
 Phone: 540-505-4387  
 Email: [erin.phalen@baesystems.com](mailto:erin.phalen@baesystems.com)

**BAE Systems Technical**  
 Name: Earl Lemon  
 Title: NC Program Manager  
 Address: Radford Army Ammunition Plant  
 PO Box 1, State Route 114  
 Radford, VA 24141  
 Phone: 540-639-8329  
 Email: [Earl.Lemon@baesystems.com](mailto:Earl.Lemon@baesystems.com)

- c. Subcontractors' Contractual and Technical POCs are as follows:

**Subcontractor Contractual**  
 Name: Lura Lewis  
 Title: Director, Contracts Management  
 Address: 100 Fluor Daniel Drive  
 Greenville, SC 29607-2770  
 Phone: 864.281.6053  
 Email: [Lura.lewis@fluor.com](mailto:Lura.lewis@fluor.com)

**Subcontractor Technical**  
 Name: Bryan Metoyer  
 Title: Project Manager/Leed AP  
 Address: 100 Fluor Daniel Drive  
 Greenville, SC 29607-2770  
 Phone: 818.456-6661  
 Email: [Bryan.metoyer@fluor.com](mailto:Bryan.metoyer@fluor.com)

d. Buyer's Subcontract Representative is the only individual authorized to direct Subcontractor's effort or amend any of the terms and conditions of this Subcontract. Unless directed by Buyer's Subcontract Representative, Subcontractor accepts full risk and responsibility and shall not assert a claim against BAE Systems or the Government, should Subcontractor follow direction from another source. All direction of effort to Subcontractor shall be in writing.

The following individuals are authorized to act as the Buyer's Subcontract Representative, and may direct the Subcontractor:

- i. Erin Phalen, Subcontract Administrator
- ii. Kelly Bate, Subcontracts Manager
- iii. Bob Creed, Director of Business Operations
- iv. Kelly Jones, Subcontract Administrator
- v. Tina Harris, Subcontract Administrator

e. Subcontractual issues that may arise during the life of this Subcontract must be handled in conformance with very specific public laws and regulations (e.g., Federal Acquisition Regulation). Only

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Buyer's Subcontract Representative is authorized to formally resolve such problems. Therefore, the Subcontractor is hereby directed to bring all such contractual problems to the immediate attention of Buyer's Subcontract Representative. The authority to issue cure/show cause notices, settle claims/disputes, amend terms and conditions and related contract actions is specifically retained by Buyer's Subcontract Representative. All matters settled herein shall be set forth in writing to all parties.

f. Subcontractor shall submit requests for information on matters related to this Subcontract, such as explanation of terms and contract interpretation, to Buyer's Subcontract Representative.

1. Buyer's Subcontract Representative is the only person authorized to make changes to this Subcontract to include:

- i. Issue TOs, Purchase Orders, or Technical Direction Letters
- ii. Issue Change Orders / Modifications
- iii. Complete any and all administrative contractual actions with Subcontractor concerning those TOs / Purchase Orders issued
- iv. Terminate TOs / Purchase Orders

### **2.3 PRIORITY RATING**

This is a defense rated Purchase Order under the Department of the Army. The Subcontractor is required to follow all the provisions of the Defense Priorities and Allocations System (Regulation 15 CFR Part 700).

Priority rating [REDACTED] applies to this Subcontract/Purchase Order.

### **2.4 CHOICE OF LAW**

In accordance with USGOVFFP incorporated herein, the substantive and procedural laws of the State of Virginia hereunder shall govern this Subcontract Agreement without regard to its conflict of the law provision.

### **2.5 COMPOSITION OF SUBCONTRACTOR**

If Subcontractor is comprised of more than one legal entity, each such entity shall be jointly and severability liable to BAE Systems under this subcontract agreement. The Subcontractor shall utilize only employees who are employed by the Subcontractor.

### **2.6 ENGLISH LANGUAGE DOCUMENTATION**

All Subcontractor-prepared material to be furnished under this subcontract shall be written in the English language, and all monetary amounts will be calculated and based upon U.S. Dollars, unless otherwise agreed in writing by both Parties.

### **2.7 GENERAL INSURANCE & INDEMNIFICATION REQUIREMENT**

During the entire performance of this Purchase Order, the Vendor shall, at its own expense, provide and maintain insurance coverage as more fully described in The terms and Conditions

### **2.9 PRE-WORK MEETING**

If Subcontractor will be working in the Limited Area at the Radford Army Ammunition Plant, a pre-work meeting is required with the Technical POC and representatives from BAE Systems' Safety and Security departments.

### **2.10 PERIOD OF PERFORMANCE/OPTION YEARS**

The anticipated period of performance of this subcontract is as follows:

Period	Date		Date
Base	October 8, 2015	Through	September 30, 2017



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BAE Systems may unilaterally extend the term of this Subcontract by giving written notice to the Subcontractor. Should BAE Systems exercise any option(s) hereunder, the existing terms and conditions of this Subcontract, as amended, shall apply during the option period(s).

**2.11 SAFETY**

Subcontractor retains the responsibility of providing a safe work environment for employees (and any authorized lower-tier subcontractors) as provided by law and regulation. When working in BAE Systems or Government facilities, Subcontractor shall also comply with applicable BAE Systems or Government safety rules and plans. BAE Systems' site-specific safety plans will be provided to Subcontractor upon request.

**(a) Occupational Safety and Health Requirements**

The subcontractor shall be responsible for ensuring the safety of all company employees, other working personnel, and government property. The subcontractor is solely responsible for compliance with the Occupational Safety and Health Act (OSHA) (Public Law 91-596) and the resulting applicable standards, OSHA Standard 29 CFR 1910 (general), 1915 (shipboard/submarine) and 1926 (shore), and for the protection, safety and health of their employees and any lower-tier subcontractors assigned to the respective task orders under this contract. It is the subcontractor's sole responsibility to make certain that all safety requirements are met and are documented as part of their quality management system.

**(b) Performance at Government Facilities**

In addition to complying to clause 5252.223-9200 Occupational Safety and Health Requirements, the subcontractor shall immediately (NLT 24 hrs. following an incident) report any accidents involving government or subcontractor personnel injuries or property/equipment damage to the subcontract administrator or project manager. The subcontractor is responsible for securing the scene and impounding evidence/wreckage until released by the subcontract administrator.

**(c) Safety Training**

The subcontractor shall be responsible to train all personnel that require safety training. Specifically, where subcontractors are performing work at Navy shore installations, that requires entering manholes or underground service utilities the subcontractor shall provide a qualified person as required in 29 CFR 1910 or 29 CFR 1926 or as recommended by the National Institute for Occupational Safety and Health (NIOSH) Criteria Document for Confined Spaces. Also, when subcontractors are required to scale a tower, all applicable personnel shall have Secondary Fall Protection and Prevention training.

**2.12 STATEMENT OF WORK**

Subcontractor, as an independent company and not as an agent of BAE Systems, shall provide the necessary facilities, personnel, equipment and materials to accomplish the assigned tasks within the parameters of this Subcontract Agreement and in accordance with the Statement of Work (SOW), Exhibit E.

**2.13 SUBCONTRACT TYPE**

**This is a Fixed Price Subcontract.** The Buyer shall pay the Subcontractor for the supplies, services and/or data delivered and accepted hereunder the firm fixed price stated in, Exhibit I. The price is not subject to any adjustment on the basis of the Subcontractor's cost experience in performing the Statement of Work.

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#### **2.14 SUBCONTRACTING WITH LOWER TIER SUBCONTRACTORS**

Subcontractor is prohibited from any lower-tier subcontracting unless authorization is granted prior to such subcontracting, in writing by BAE Systems' Subcontracting Representative.

#### **2.15 SUBMISSION OF INVOICES**

a. Subcontractor shall submit by mail or an electronic invoice, together with any necessary supporting documentation, to the following addresses:

Email: **osiaccountspayable@baesystems.com**

Direct Mail:

**BAE SYSTEMS INC., Ordnance Systems Inc**  
**4509 West Stone Drive**  
**Kingsport, TN 37660**  
**ATTN: OSI Accounts Payable**

b. All packing slips and invoices must reference BAE Systems' Purchase Order/Subcontract Number and the appropriate Subcontract Line Item (SLIN).

e. Payment of invoices shall be Net 30 Days **FOLLOWING RECEIPT OF ACCURATE, COMPLETE AND APPROVED INVOICE**. Each invoice shall contain the following statement, which shall be dated and signed by an authorized representative of Subcontractor: **"This is to certify that the services set forth herein were performed during the period stated, and the amounts reflected hereon are true and accurate in accordance with the terms of the Subcontract Agreement."**

#### **2.16 SUCCESSORS OF PARTIES**

This Subcontract Agreement is binding on the parties and their respective legal representatives, trustees, successors and assignees.

#### **2.17 TERMINATION FOR CAUSE**

BAE Systems may terminate this subcontract, or any part hereof, for cause in the event of default by the Subcontractor, failure to comply with subcontract terms and conditions, or failure to provide Subcontracts Administrator, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Subcontractor for any amount for supplies or service not accepted and the Subcontractor shall be liable to BAE Systems for any and all rights and remedies provided by law. The Subcontractor will be provided an eight (8) day opportunity, after receipt of written notice from BAE Systems specifying failure, to cure defects in performance prior to termination for reasons other than gross negligence. If it is determined that BAE Systems improperly terminated this Subcontract for default, the subcontract may be restored.

Cure Notice. If the Subcontract or a portion of the Subcontract is to be terminated for default before the end performance date, a "Cure Notice" is required. Before using this notice, it must be ascertained that an amount of time equal to or greater than the period of "cure" remains. If the time remaining in the subcontract is not sufficient to permit a realistic "cure" period of eight (8) days or more, the "Cure Notice" should not be issued.

#### **2.18 TRAVEL**

Fluor is responsible for travel costs incurred in performance of the scope of work.

**BAE SYSTEMS****2.19 OPERATIONS AND STORAGE AREAS**

Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the subcontractor only with the approval of the BAE Systems Subcontracts Administrator and shall be built with labor and materials furnished by the subcontractor without expense to BAE Systems. The temporary buildings and utilities shall remain the property of the subcontractor and shall be removed by the subcontractor at its expense upon completion of the work. With the written consent of the BAE Systems Subcontract Administrator, the buildings and utilities may be abandoned and need not be removed.

**2.20 AVAILABILITY AND USE OF UTILITY SERVICES**

BAE Systems shall make all reasonably required amounts of utilities available to the subcontractor from existing outlets and supplies, as specified in the subcontract. The subcontractor shall carefully conserve any utilities furnished without charge. The subcontractor, at its own expense and in a workmanlike manner satisfactory to the BAE Systems Subcontracts Administrator, shall install and maintain all necessary temporary connections and distribution lines. Before final acceptance of the work by BAE Systems, the Subcontractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

**2.21 LIMITATION OF DAMAGES**

Except as otherwise provided in this Subcontract, in the event of either Party's failure to perform in accordance with this Subcontract, whether such failure is occasioned by the acts or omissions of either Party, its respective suppliers, or the BAE Parties, either Party may pursue any and all damages and remedies available under this Agreement and/or applicable law. Except as otherwise provided in this Subcontract, damages and remedies that may be recovered by either Party shall be limited as follows: For all claims, regardless of the basis on which the claim is made, the applicable party's liability for damages arising under or related to this Subcontract shall be limited to \$30M, \$30M being defined as the value including all changes and the maximum liability for damages. Neither Party shall be liable for any indirect, special, incidental or consequential damages, including but not limited to lost profits or business interruption losses, whether arising under contract, warranty, express or implied tort, including negligence, or strict liability, arising at any time from any cause whatsoever in connection with this Subcontract or performance hereunder, even if caused by the sole or concurrent or active or passive negligence, strict liability or other legal fault of either of the Parties, their members, directors, officers, employees, agents, representatives, parent companies, subsidiaries, affiliates, joint venture partners, successors and assigns, and each of their respective owners, partners, members, shareholders, directors, managers, officers, employees, agents, representatives and subcontractors at any tier.

**2.22 Contingency**

There is \$14 million in the price of this contract for unforeseen contingencies, other than changes to the contract compensable under the Changes clause. If a contingency arises for which Fluor will use the contingency funding, Fluor will document the circumstances and the estimated amount. Prior to drawing on the funding the following procedure will be followed:

- The BAE Program Manager (PM) and Fluor Construction Operations Director will agree on the amount and use of the funding. If agreement is not reached,
- The matter will be resolved by the Fluor Government Contracts Manager and the BAE Subcontract Administrator. If they do not agree,
- The BAE Vice President/Deputy General Manager and the Fluor Services and Solutions Senior Vice President will seek agreement.
- If there is no agreement, Fluor will make the final determination on use of the contingency funding.

Upon completion of the Contract, Fluor and BAE will share in any remaining contingency funding on a



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50:50 basis.

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**PART 3.0 – PRIME CONTRACT SPECIAL TERMS AND CONDITIONS**

Attached

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**PART 4.0 – ATTACHMENTS**

Exhibit A – BAE\_Construction 05/15 Modified

Exhibit B – USGOVA-CON 05-15

Exhibit C – S1 Version 03-15: Supplemental Terms and Conditions – Services Modified

Exhibit D – Appendix J Rev 9 Modified

Exhibit E – Technical Bid Package (Sharepoint)

Exhibit F – Milestone Schedule

Exhibit G – Wage Determination Schedule

Exhibit H Flowdown Clauses

Exhibit I Supplier Proposal (Nov. 25, 2015)

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**BAE CONSTRUCTION (modified)**

**GENERAL PROVISIONS FOR CONSTRUCTION SUBCONTRACTS/PURCHASE ORDERS**

Note: If this Contract includes Design, BAEDOC S1 shall apply in addition

**SECTION I: General Provisions for All Orders**

**Section 1A: General/Administrative Provisions**

1. Definitions
2. Acceptance of Contract/Terms and Conditions
3. Precedence
4. Contract Direction/Changes
5. Information
6. Survivability
7. Severability and Waivers
8. Payments
9. Taxes
10. Records
11. Entry on BAE SYSTEMS or Customer Property
12. Independent Contractor Relationship
13. SUBCONTRACTORS
14. Superintendence
15. Licensed Personnel
16. Offset Credit/Cooperation

**Section 1B: Laws and Regulations**

17. Applicable Laws
18. Gratuities/Kickbacks/Ethical Conduct/Status
19. Export Control
20. Disputes/Jury Waiver
21. Waiver, Approval, and Remedies

**Section 1C: Construction Requirements**

22. Site Investigations and Representations
23. Specifications and Drawings
24. Material and Workmanship
25. Operations, Storage Areas and Temporary Construction Facilities
26. Preservation of Existing Vegetation
27. Protection of Materials and Work Performed
28. Removal of Equipment and Cleanup
29. Construction Schedule/Time/Delays
30. Use of Structure Before Acceptance
31. Warranty and Correction of Defects
32. Inspection and Acceptance
33. Sustainable Development

**Section 1D: Liability and Indemnification**

34. Indemnification
35. Bonds
36. Limitation of Liability
37. Insurance
38. BAE Systems Property
39. Notice of Labor Disputes
40. Intellectual Property
41. Reproduction and Use of Technical Data
42. Safety and Accident Prevention
43. Cessation of Work
44. Termination for Convenience
45. Termination for Default

**SECTION II: Additional Provisions for Orders under a US Government Prime Contract**

1. Priority Rating
2. Communication with the Government
3. Supplemental Terms and Conditions
4. Survivability
5. Applicable Laws
6. Records
7. CAS Noncompliance
8. Foreign Sales
9. Government Inspection at Source
10. Ocean Transport of Government-Owned Supplies

## 11. Controversies

**Section 1A: General/Administrative Provisions****1. DEFINITIONS**

The following terms shall have the meanings set forth below:

- a) "BAE SYSTEMS" means the BAE SYSTEMS legal entity as identified on the face of this Contract.
- b) "BAE SYSTEMS Procurement Representative" means the person authorized by BAE SYSTEMS's cognizant procurement organization to administer this Contract and may be referred to as Buyer, Subcontract Administrator or Material Representative in some exhibits.
- c) "Change Order," "Amendment," "Notification of Change," or "Modification" shall mean a formal written order describing the change to be made, issued and signed by a BAE SYSTEMS Procurement Representative.
- d) "Claim" means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment in a sum certain, the adjustment or interpretation of Contract terms or other allowable relief arising under this Contract. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under this Contract. The submission may be converted to a claim under this Contract by complying with any submissions required, if there is a dispute either as to liability or amount.
- e) "Contract" and "Contract Documents" mean the instrument of contracting, such as "PO," "Purchase Order," "Subcontract" or other such type designation, including all referenced documents, exhibits, specifications, samples, drawings, shop drawings and attachments, and Modifications issued subsequent to the execution of the Contract. If these terms and conditions are incorporated into a "master" agreement that provides for releases, (in the form of a Purchase Order or other such document) the term "Contract" shall also mean the Release document for the Work to be performed. The term "day" as used in the Contract Documents shall mean calendar day unless specifically designated otherwise.
- f) "Contract Schedule" means the CONTRACTOR shall, prior to commencement of Work, prepare and submit for approval three (3) copies of a practicable schedule, showing the order in which the CONTRACTOR proposes to perform the Work, the dates on which CONTRACTOR will start the several salient features (including procurement of materials, plant and equipment) and the contemplated dates for completing each portion. The Contract Schedule shall be in the form of a progress chart of suitable scale to indicate the percentage of Work scheduled for completion at any time.
- g) "Contract Sum" means the total amount payable by BAE SYSTEMS to CONTRACTOR for performance of the Work under the Contract Documents and includes all applicable federal, state and local taxes, duties and fees.
- h) "CONTRACTOR" means the Party identified on the face of the Contract with whom BAE SYSTEMS is contracting to furnish the Work.
- i) "Project" means the total construction required under the Contract Documents.
- j) "Site" shall mean the physical place or places where the construction work called for in this Contract will remain when work on it has been completed. It

includes other adjacent or nearby property used by the CONTRACTOR or SUBCONTRACTOR'S in such construction which can reasonably be said to be included in the Site".

- k) "SUBCONTRACTOR" means those having a direct Contract with the CONTRACTOR for the performance of any part of the work called for hereunder. The term shall also include one who merely furnishes material. Nothing contained in this Contract shall create any contractual relationship between BAE SYSTEMS and any SUBCONTRACTOR at any tier. Except as otherwise provided in this Contract, the term "Subcontract" means all contracts placed by the CONTRACTOR or lower tier SUBCONTRACTOR'S for the specific purpose of performing any portion of the work under this Contract, and includes but is not limited to purchase orders and changes, or modifications thereto.
- l) "Substantial Completion of the Work" is the date when the construction is sufficiently complete, in accordance with the Contract Documents, such that BAE SYSTEMS or BAE SYSTEMS' lessees or assigns can fully occupy or utilize the Work and the Project as intended.
- m) "Work" means all of the design and construction which CONTRACTOR is required to perform under the Contract Documents or can be reasonably inferred from the Contract Documents, and shall include all labor, tools, construction means, construction equipment, materials, supplies, facilities, services, scaffolding, appliances, water, heat, air conditioning, utilities, transportation, and everything reasonably necessary or proper to complete the design and construction of the Project, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**2. ACCEPTANCE OF CONTRACT/TERMS AND CONDITIONS**

- a) This Contract integrates, merges, and supersedes any prior offers, negotiations, and agreements concerning the subject matter hereof and constitutes the entire agreement between the Parties.
- b) CONTRACTOR's acknowledgment, acceptance of payment, or commencement of performance, shall constitute CONTRACTOR's unqualified acceptance of this Contract.
- c) Additional or differing terms or conditions proposed by CONTRACTOR or included in CONTRACTOR's acknowledgment hereof are hereby objected to by BAE SYSTEMS and have no effect unless expressly accepted in writing by BAE SYSTEMS.
- d) Any assignment of CONTRACTOR's contract rights or delegation of duties shall be void, unless prior written consent is given by BAE SYSTEMS. A change of control of CONTRACTOR shall constitute an impermissible assignment. However, CONTRACTOR may assign rights to be paid amounts due, or to become due, to a financing institution if BAE SYSTEMS is promptly furnished a signed copy of such assignment reasonably in advance of the due date for payment of any such amounts. Amounts assigned to an assignee shall be subject to setoffs or recoupment for any present or future claims of BAE SYSTEMS against CONTRACTOR. BAE SYSTEMS shall have the right to make settlements and/or adjustments in price without notice to the assignee. BAE SYSTEMS may freely assign this contract. Subject to the limitations relative to assignments, CONTRACTOR, administrators, executors, successors and assigns, hereby agree to the full performance of all of the covenants and agreements herein contained.

- e) If this is an undefinitized PO, by acceptance, CONTRACTOR agrees:

- i. to submit (if not already submitted);
  - a. a fixed price or cost and fee type quote/proposal, as appropriate to the type of PO noted elsewhere in this PO, and
  - b. supporting cost or pricing data if requested by BAE SYSTEMS,
- ii. to enter promptly into negotiations in good faith to definitize undefinitized issues, anticipating a definitized PO and for each of the above requirements, prior to the target dates set forth elsewhere in this PO. All provisions referenced in the PO shall apply. Federal Law, Executive Orders and Government Procurement Regulations applicable to a definitized PO of the type anticipated by this undefinitized PO shall apply.
- iii. to proceed immediately to procure materials and take such other actions as are proper and called for to ensure that the supplies may be delivered or services performed on time. CONTRACTOR is not authorized to incur obligations which would result in a termination liability to BAE SYSTEMS in excess of the Maximum Termination Liability amount set forth in this PO as of the anticipated definitization date set forth in this PO or such extension of time as may be granted by BAE SYSTEMS.
- iv. in the event this PO is not definitized by the anticipated definitization date set forth in this PO or within such extension of time as may be granted by BAE SYSTEMS, that this undefinitized PO shall expire automatically; in which event CONTRACTOR will be paid an amount not to exceed the maximum determinable in accordance with the termination provisions which apply to this PO.

### 3. CONTRACT DIRECTION/CHANGES

- a) Upon award of Contract to CONTRACTOR, Advanced Engineering Change Notices ("AECN") may be field authorized by a BAE SYSTEMS Field Representative due to project urgency during the course of the work if the change is within the general scope of the Project, but in no case shall said change be implemented unless first documented and signed by an authorized Procurement Representative. Authorized BAE SYSTEMS personnel shall be specifically named in the body of the Contract. CONTRACTOR shall provide a "Good Faith Estimate" of the costs to implement each AECN prior to proceeding with the change. The AECN will be signed by both parties and a copy provided to CONTRACTOR. CONTRACTOR shall provide a firm quotation to the BAE SYSTEMS Procurement Representative within seven (7) days of AECN issuance and negotiate in good faith to arrive at a final cost for the change. The Procurement Representative shall then ratify or adjust the AECN by formal Change Order.
- b) Only the BAE SYSTEMS Procurement Representative has authority to make changes in, to amend, or to modify this Contract on behalf of BAE SYSTEMS. CONTRACTOR shall not implement any changes or modifications to this contract (including contract specifications and quality control provisions) without first having received written authorization to do so from BAE SYSTEMS' Procurement.

- c) BAE SYSTEMS program, operations, engineering, technical, or other personnel may from time to time render assistance, give technical advice, discuss, or exchange information with CONTRACTOR's personnel concerning the Work hereunder. Such actions shall not be deemed to be a change under this clause of this Contract and shall not be the basis for equitable adjustment. If CONTRACTOR believes the foregoing creates an actual or constructive change, CONTRACTOR shall notify the BAE SYSTEMS Procurement Representative and shall not accept such direction or perform said action unless authorized by BAE SYSTEMS Procurement Representative.

- d) Except as otherwise provided herein, all notices to be furnished by the CONTRACTOR shall be sent to the BAE SYSTEMS Procurement Representative and designated Field Representative.

- e) BAE SYSTEMS may, at any time, exclusively by a written order signed by its Procurement Representative, and without notice to sureties, if any, make changes within the general scope of this contract in any one or more of the following:

- i. Drawings, designs, or specifications when the supplies being furnished are to be specially manufactured for BAE SYSTEMS in accordance with the drawings, designs, or specifications;
- ii. Method of shipment or packing;
- iii. Place of inspection, delivery or acceptance;
- iv. Work schedules; and/or
- v. Any other matters affecting this contract.

- a) If any such change causes an increase or decrease in the cost of or the time required for performance of this contract, an equitable adjustment shall be made in the contract price, the delivery schedule, or both, and the contract shall be modified in writing accordingly. Any claim by SELLER for adjustment under this article must be asserted in writing to BAE SYSTEMS' Procurement Representative no later than thirty (30) calendar days (five (5) calendar days for Ship Repair) after the date of receipt by SELLER of the written change authorization or within such extension as BAE SYSTEMS may grant in writing; BAE SYSTEMS may, in its sole discretion, consider any such claim regardless of when asserted. Such claim shall be in the form of a complete change proposal fully supported by factual information. Pending any such adjustment, SELLER will diligently proceed with the contract as modified. Where the cost of property made excess or obsolete as a result of a change is included in SELLER's claim for adjustment, BAE SYSTEMS shall have the right to direct the manner of disposition of such property. BAE SYSTEMS shall have the right to examine any of SELLER's pertinent books and records for the purpose of verifying SELLER's claim.

- f) BAE SYSTEMS shall not be liable for any of Contractor's increased cost of performance that result from Contractor's implementation of changes or modifications that BAE SYSTEMS' Procurement Representative did not first approve in writing.

- g) BAE SYSTEMS and CONTRACTOR agree that if this Contract, or any order, ancillary agreement, or correspondence is transmitted electronically neither BAE SYSTEMS nor CONTRACTOR shall contest the validity thereof, on the basis that this Contract, or the order, acknowledgement, ancillary agreement, or correspondence exists only in electronic form, an electronic record was used in its creation or formation, or it contains only an Electronic Signature or it was generated automatically,



without human intervention by a system intended for the purposes of generating same.

- h) The CONTRACTOR shall submit any "proposal for adjustment" (hereafter referred to as "proposal") under this clause within seven (7) days from the date of receipt of the written order. However, if the BAE SYSTEMS Procurement Representative decides that the facts justify it, the BAE SYSTEMS Procurement Representative may receive and act upon a proposal submitted before final payment of the Contract.
  - i) If any such change causes an increase or decrease in the cost of or the time required for performance of this contract, an equitable adjustment shall be made in the contract price, the delivery schedule, or both, and the contract shall be modified in writing accordingly.
  - j) Prior to the issuance of a change order under this Contract, BAE SYSTEMS may solicit from the CONTRACTOR written agreement as to the maximum (in the case of an increase) or minimum (in the case of a decrease) adjustment to be made in the price and/or in the schedule (or time of performance), by reason of the change. BAE SYSTEMS may also solicit such agreement on limitations on the adjustments to any other provisions of the Contract which may be subject to equitable adjustment by reason of the change. The CONTRACTOR shall promptly submit a "not-to-exceed" (or "no-less-than") amount or maximum (or minimum) schedule adjustment when so requested by BAE SYSTEMS. Any such written agreement shall then be cited in the change order and upon its issuance shall be deemed to become part of the Contract. In no event shall the definitive equitable adjustment exceed the maximum (or be less than the minimum) price and/or delivery schedule (or time of performance) adjustments so established, nor otherwise be inconsistent with other adjustment limitations so established. Except with respect to such limitations, nothing contained herein shall affect the right of the Parties to an equitable adjustment by reason of the change, pursuant to this clause.
  - k) Unless expressly stipulated elsewhere in this Contract as being excepted from this provision, wherever this Contract provides for submittal of designs, components, processes, or other items for review or approval by BAE SYSTEMS, such reviews or approvals shall not be construed as a complete check as to the adequacy of said design or item, nor as an agreement that the design or items will meet the requirements of the Statement of Work, nor as any change to the requirements of the Statement of Work. Such reviews and approvals shall in no way relieve the CONTRACTOR of the responsibility for any error or deficiency which may exist in the submitted design or other items, as the CONTRACTOR shall be responsible for meeting all the requirements of the contract.
  - l) If the CONTRACTOR's proposal includes the cost of property made obsolete or excess by the change, BAE SYSTEMS shall have the right to prescribe the manner of the disposition of the property.
  - m) Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the CONTRACTOR from proceeding with the Contract as changed.
- 4. INFORMATION**
- a) Information provided by BAE SYSTEMS to CONTRACTOR remains the property of BAE SYSTEMS. CONTRACTOR shall comply with all

proprietary information markings and restrictive legends applied by BAE SYSTEMS to anything provided hereunder to CONTRACTOR. CONTRACTOR shall not use any BAE SYSTEMS provided information for any purpose except to perform this Contract and shall not disclose such information to third parties without the prior written consent of BAE SYSTEMS. Information provided by BAE SYSTEMS shall be returned to BAE SYSTEMS upon completion of the Work.

- b) If the parties have entered into a Proprietary Information Agreement pertaining to the Work of this Contract, the terms and conditions of such Proprietary Information Agreement shall govern the protection and exchange of proprietary information between the Parties. CONTRACTOR shall not provide any proprietary information to BAE SYSTEMS without prior execution by BAE SYSTEMS of a Proprietary Information or Non-Disclosure Agreement that expressly covers the performance of Work under this Contract.
- c) Except as required by law, no public release of any information, or confirmation or denial of same, with respect to this Contract or the subject matter hereof, shall be made by CONTRACTOR without the prior written approval of BAE SYSTEMS Procurement Representative.
- d) CONTRACTOR agrees not to reproduce, use, or disclose to any third party or use any information or other matter furnished by or acquired from BAE Systems or developed as a result of the services rendered under this Contract except to the extent required by law and as otherwise may be authorized in writing by an authorized agent of BAE Systems. CONTRACTOR agrees to obtain from its employees and agents a signed nondisclosure agreement acceptable to BAE Systems upon BAE Systems' request. CONTRACTOR shall insert the provisions of this Provision in any subcontract issued hereunder. Upon BAE Systems' request any such information or other matter, including but not limited to data and designs, including any copies, shall be returned to owner.
- e) BAE SYSTEMS shall be under no obligation to restrict disclosure or use of any information provided, either directly or indirectly, by CONTRACTOR unless and until a Proprietary Information Agreement is executed in writing by BAE SYSTEMS. In the absence of a Proprietary Information Agreement, BAE SYSTEMS shall have the unrestricted right to use and disclose all such information notwithstanding any specific legend or statement associated therewith.

#### **5. SURVIVABILITY**

If this Contract expires, is completed or is terminated, CONTRACTOR shall not be relieved of those obligations contained in the following provisions:

- a) Applicable Laws  
Counterfeit Parts: Prevention and Notification  
Definitions  
Disputes/Jury Waiver  
Export Control  
Furnished Property  
Independent Contractor Relationship  
Information  
Entry on BAE SYSTEMS or Customer Property  
Intellectual Property  
Records  
Parts Obsolescence  
Warranty
- b) Corresponding provisions to above as incorporated through Supplemental Terms and Conditions provision
- c) Representations and warranties made by CONTRACTOR in the Contract Documents

**6 SEVERABILITY AND WAIVERS**

- a) Each paragraph and provision of this Contract is severable, and if one or more paragraphs or provisions are declared invalid, the remaining provisions of this Contract will remain in full force and effect.
- b) No deviation from the covenants contained in the Contract Documents, for any reason whatsoever and whether authorized or otherwise, shall be deemed to constitute a precedent or waiver with respect to the handling of any subsequent interpretation or application of any of the provisions of the Contract Documents.

**7. PAYMENTS**

- a) BAE SYSTEMS shall pay the Contract Sum as provided in this Contract.
- b) BAE SYSTEMS will process milestone payments in accordance with the Milestone Schedule (Exhibit F).
- c) Terms of payment shall be Net 30 days and shall be subject to reduction for overpayments or increase for underpayments on preceding payments to the CONTRACTOR. No invoice or authorization for a payment, nor any payment, nor any partial or entire use or occupancy of the Project by BAE SYSTEMS or BAE SYSTEMS' lessees or assigns, shall constitute an acceptance of any Work not in accordance with the Contract Documents.

d) The CONTRACTOR warrants that title to all Work, materials and equipment covered by an Invoice for Payment will pass to BAE SYSTEMS or BAE SYSTEMS' assigns either by incorporation in the construction or upon the receipt of payment by the CONTRACTOR, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, herein referred to in this Clause "8" as "liens;" and that no Work, materials or equipment covered by an Invoice for Payment will have been acquired by the CONTRACTOR, or by any other person performing Work at the Project Site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the CONTRACTOR or otherwise imposed by the CONTRACTOR or such other person, which would survive payment to the CONTRACTOR. This provision shall not be construed as relieving the CONTRACTOR from the sole responsibility for all materials and Work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of BAE SYSTEMS to require the fulfillment of all of the terms of the Contract.

- e) Lien Waiver Requirements.

i. Defined Terms. As used in this Clause 8, the following terms shall have the meanings set forth below:

Conditional Lien Waiver a lien waiver from the applicable party, originally signed by that party (not by stamp or electronic signature) in a form that has been approved by BAE Systems which waives all rights of the signatory to any claim for any mechanics, materialmen or other lien, or any other title retention claim for that party, or for any party who may claim any such right as a result of any contractual or other agreement pertaining to the Work or the Project, conditioned only upon receipt of payment of the specified amount due to that party.

Unconditional Lien Waiver a lien waiver from the applicable party, originally signed by that party (not by stamp or electronic signature) in a form that has been approved by BAE SYSTEMS but which waives all rights of the signatory to any claim for any mechanics, materialmen or other lien, or any other title retention claim for that party, or for any party who may claim any such right as a result of any contractual or other agreement pertaining to the Work or the Project, recognizing its receipt of payment for the amounts identified therein.

Major Subcontractors and Suppliers each subcontractor and/or material supplier retained by the Contractor to perform all or any part of the Contractor's Work who has one or more contractual or other agreements, directly or indirectly, with the Contractor covering labor, services or materials furnished or to be furnished in connection with the Contractor's Work which provide for payment of amounts, in the aggregate, equal to or greater than Ten Thousand Dollars (\$10,000.00).

ii. Commencing with the Contractor's first Application for Payment, and with each subsequent Application, the Contractor will submit to BAE SYSTEMS Conditional Lien Waivers (as herein defined) covering the Contractor's Work for which the Contractor is seeking reimbursement. Commencing with the second Application and all subsequent Applications, the Contractor will submit to BAE SYSTEMS: (a) Unconditional Lien Waivers (as herein defined), covering the Contractor's Work for which the Contractor received payment on its immediately preceding Application; and (b) Conditional Lien Waivers covering the Contractor's Work for which the Contractor is seeking reimbursement on the current Application. The Conditional Lien Waivers and Unconditional Lien Waivers contemplated herein must be provided by all Major Subcontractors and Suppliers (as herein defined) who provided labor or materials in connection with the Contractor's Work for which the Contractor has requested and/or received payment on the pending Application. If the specified lien waivers are not provided as required, the Application will not be processed for payment until all required lien waivers are received by BAE SYSTEMS.

f) In making such progress payments there shall be retained ten (10) percent of the invoiced amount until final completion and acceptance of all work covered by the Contract; provided, however, that BAE SYSTEMS, at any time after fifty (50) percent of the Work has been completed, if BAE SYSTEMS finds that satisfactory progress is being made, may reduce the amount of retainage or make any of the remaining partial payments in full; and, providing further, that on completion, acceptance of the Work, and receipt of the required Unconditional Lien Waivers, payment may be made in full, including retained percentage thereon, less authorized deductions for incomplete or defective Work.

g) The CONTRACTOR may, if any SUBCONTRACTOR refuses to furnish a release or receipt in full, furnish a bond satisfactory to BAE SYSTEMS, to indemnify BAE SYSTEMS against any lien. If any lien remains unsatisfied after all payments are made, the CONTRACTOR shall refund to BAE SYSTEMS all monies that the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorneys' fees.

h) The obligation of BAE SYSTEMS to make the payments required under the provisions of this Contract shall, in the discretion of BAE SYSTEMS, be subject to (1) reasonable deductions on account of defects in material or workmanship, and (2) any claims which BAE SYSTEMS may have against the CONTRACTOR under or in connection with this Contract. Any overpayments to the CONTRACTOR shall, unless otherwise adjusted, be repaid to BAE SYSTEMS upon demand.

i) The CONTRACTOR shall promptly pay each SUBCONTRACTOR, upon receipt of payment from BAE SYSTEMS, out of the amount paid to CONTRACTOR on account of such SUBCONTRACTOR'S work, the amount to which said SUBCONTRACTOR is entitled, reflecting the percentage actually retained, if any, from payments to the CONTRACTOR on account of such



SUBCONTRACTOR'S work. CONTRACTOR shall, by an appropriate agreement with each SUBCONTRACTOR, require each SUBCONTRACTOR to make payments to their SUBCONTRACTOR'S in similar manner. BAE SYSTEMS may, at BAE SYSTEMS' sole discretion, make direct payments to CONTRACTOR'S SUBCONTRACTOR'S for amounts owed by CONTRACTOR to SUBCONTRACTOR'S and deduct the amount of these payments from the Contract Sum.

j) BAE SYSTEMS' Procurement Representative or Designated Field Representative may decline to authorize payment and may withhold BAE SYSTEMS' authorization in whole or in part, to the extent necessary to reasonably protect BAE SYSTEMS. BAE SYSTEMS shall be entitled at all times and without notice to any surety, set-off any amount owing at any time from CONTRACTOR to BAE SYSTEMS against any amounts payable at any time by BAE SYSTEMS.

k) CONTRACTOR hereby agrees that any refund, rebate, or credits (including any related interest) accruing to or received by CONTRACTOR, or SUBCONTRACTOR, that arise under this Contract and for which CONTRACTOR has received reimbursement from BAE Systems, shall be disclosed to BAE Systems and credited against the total costs incurred and paid by BAE Systems.

l) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract

#### 8 TAXES

- a) CONTRACTOR shall pay all federal, state and local taxes in effect on the date of the Contract with respect to the Work, including, without limitation, sales, consumer, use and other similar taxes required by law or local authority having jurisdiction.
- b) Unless otherwise specified, prices include all applicable federal, state and local taxes, duties, tariffs, and similar fees imposed by any government.
- c) To the extent that any purchase order includes Federal, state or local tax and BAE Systems pays such tax and subsequently all or a portion of that tax is refunded to the CONTRACTOR, the CONTRACTOR shall refund that amount to BAE Systems.
- d) Purchase, rental, or lease of supplies, tools, materials, equipment, and/or services necessary to perform the Work may be exempt from all or part of any sales or use tax imposed by the state, county, or other municipality having tax jurisdiction over the Work. An appropriate exception certificate or other document will be issued to the CONTRACTOR by BAE Systems in order to secure such tax exemption. Accordingly, the CONTRACTOR shall not bill BAE Systems for taxes for Work that is exempt from those taxes.

#### 9. MAINTENANCE OF RECORDS

- a) Unless a longer period is specified in this Contract or by law or regulation, SUBCONTRACTOR shall retain all records related to this Contract for three (3) years from the date of final payment received by SUBCONTRACTOR. Records related to this Contract include, but are not limited to, accounts receivable invoices, adjustments to the accounts, invoice registers, and other documents which are related to invoices, proposal, procurement, specifications, production,

inspection, test, quality, quality processes and procedures, shipping and export, certifications, and receipt records.

- b) BAE SYSTEMS and its customer shall have access to such records, and any other records SUBCONTRACTOR is required to maintain under this Contract, for the purpose of audit during normal business hours, upon reasonable notice for as long as such records are required to be retained. Audit rights shall be available to BAE SYSTEMS on all performance related reports and other records, except records pertaining to proprietary indirect cost data. Audit of any proprietary indirect cost data may be accomplished through the responsible Defense Contract Audit Agency (DCAA) representative, or a mutually agreeable third party auditor from a nationally recognized firm of certified public accountants

#### 10 ENTRY ON BAE SYSTEMS OR CUSTOMER PROPERTY

- a) CONTRACTOR'S personnel, while on BAE SYSTEMS' or Customer's premises, shall not sell, advertise or market any goods or services (other than the goods or services which may be the subject of this Contract) or memberships, or distribute printed, written or graphic materials without BAE SYSTEMS' written permission or as permitted by law.
- b) CONTRACTOR must coordinate in advance with BAE SYSTEMS access to BAE SYSTEMS' or Customer's premises
- c) If CONTRACTOR'S personnel are to work at BAE SYSTEMS' facility with unescorted access, CONTRACTOR is required to have performed pre-employment background screenings at no charge to BAE SYSTEMS. CONTRACTOR employees and CONTRACTOR SUBCONTRACTOR'S will not be allowed access to work at BAE SYSTEMS facilities until written confirmation from CONTRACTOR has been received by the BAE SYSTEMS Procurement Representative stating that CONTRACTOR'S employees are cleared by CONTRACTOR to report to work. If the CONTRACTOR personnel in question holds a U.S. Government-granted Security clearance or access that has been validated by BAE SYSTEMS through JPAS (Joint Personnel Adjudication System) or via a visit certification, then a pre-employment background screening for that CONTRACTOR personnel is not required. Pre-employment background screenings must include the following (a) Identity and Right to Work Verification (Criteria: A successful I-9 / E-Verify System Check) (b) Criminal Conviction Check, to the extent permitted by applicable law, for a minimum of previous seven years for each county lived in (Criteria: No record or if misdemeanors, occurrence greater than seven years prior, then the CONTRACTOR may choose to provide an explanation of the event to BAE SYSTEMS. BAE SYSTEMS will review the explanation against security requirements) (c) Education Verification for degreed positions only; and (d) Minimum of three years of employment history (Criteria: Employment history is confirmed as presented). CONTRACTOR'S SUBCONTRACTOR'S are not deemed employees of the CONTRACTOR for these purposes and shall perform their pre-employment background screenings and provide results to the CONTRACTOR.
- d) CONTRACTOR shall ensure that personnel assigned to work at BAE SYSTEMS' or Customer's premises comply with any on-premises guidelines. Unless otherwise authorized in writing by BAE SYSTEMS, CONTRACTOR'S personnel assigned to work at BAE SYSTEMS' or Customer's premises shall while at BAE SYSTEMS' or Customer's premises (i) not bring weapons of any kind; (ii) not manufacture, sell, distribute,

- possess, use or be under the influence of controlled substances or alcoholic beverages; (iii) not possess hazardous materials of any kind; (iv) remain in authorized areas only; and/or (v) not solicit BAE SYSTEMS' employees for employment during business hours. The CONTRACTOR shall additionally be responsible for requiring each employee engaged on the site to display such identification as may be approved and directed by BAE SYSTEMS. All prescribed identification shall immediately be delivered to BAE SYSTEMS, for cancellation, when such employee is no longer engaged on the site. When required by BAE SYSTEMS, the CONTRACTOR shall also obtain and submit fingerprints of all persons employed or to be employed on the project.
- e) All CONTRACTOR personnel, property, and vehicles entering or leaving BAE SYSTEMS' or Customer's premises are subject to search.
  - f) CONTRACTOR shall promptly notify BAE SYSTEMS and provide a report of any and all physical altercations, assaults or harassment, and accidents or security incidents involving death, personal injury or loss of or misuse of or damage to BAE SYSTEMS' or Customer's property, while on BAE SYSTEMS' or its Customer's premises.
  - g) BAE SYSTEMS may, at its sole discretion, remove or require CONTRACTOR to remove any specified personnel of CONTRACTOR from BAE SYSTEMS' or Customer's premises and request that such personnel not be reassigned to any BAE SYSTEMS premises under this Contract or any other contract. Any costs arising from or related to removal of CONTRACTOR's employee shall be borne solely by CONTRACTOR and not charged to this Contract.
  - h) CONTRACTOR shall not assign any persons to work at BAE SYSTEMS facilities who are not a "U.S. Person" per 22 C.F.R. 120.15 (lawful permanent resident as defined by 8 U.S.C. 1101(a)(20)).
  - i) CONTRACTOR shall be responsible for ensuring that all personnel it assigns to this Contract have all required work permits, appropriate licenses, and security clearances necessary to perform the Work. CONTRACTOR shall produce such records at any reasonable time upon BAE SYSTEMS request.
  - j) CONTRACTOR acknowledges that BAE SYSTEMS and/or BAE SYSTEMS' customer have a zero tolerance policy for harassing behavior. CONTRACTOR, its employees, and its lower-tier SUBCONTRACTOR'S (when permitted) shall comply with the conduct requirements in effect at a worksite of BAE SYSTEMS or its Customer. BAE SYSTEMS and its Customer reserve the right to exclude or remove from any worksite, any individual who has been deemed careless, uncooperative, or whose continued employment has been determined by BAE SYSTEMS or its Customer to be contrary to the BAE SYSTEMS', the Customer's, or the public's interest. Exclusion from the worksite under the circumstances described in this clause shall not relieve CONTRACTOR from full performance of the Contract, nor will it provide the basis for an excusable delay or any claims against BAE SYSTEMS or its Customer.
  - k) If this Contract was issued by BAE SYSTEMS Ship Repair Inc. or one of its subsidiaries, the Indemnity Agreement executed by SELLER in connection with becoming an approved subcontractor to BAE SYSTEMS shall apply.
  - l) Escorting Employees
    - i. In the interest of security, freedom of access to certain areas of BAE SYSTEMS is restricted. It may therefore be essential that CONTRACTOR employees engaged in Work at BAE SYSTEMS be escorted and supervised during the entire time they are within any fenced or restricted (controlled) area of BAE SYSTEMS owned or leased property.
    - ii. Certain rooms, areas and/or buildings within BAE SYSTEMS have been declared "CONTROLLED" for security purposes. The CONTRACTOR's responsibility for escorting and supervising the movement of CONTRACTOR's employees who work in CONTROLLED areas is assumed by BAE SYSTEMS. When CONTRACTOR's employees work in any other BAE SYSTEMS area not designated Controlled, the CONTRACTOR shall provide for the escorting and supervision of CONTRACTOR's employees in accordance with the requirements set forth below. The term "CONTRACTOR's employees" shall also include CONTRACTOR's SUBCONTRACTOR'S and SUBCONTRACTOR employees.
    - iii. If the total labor force involved does not exceed five (5) individuals, the CONTRACTOR's supervisor on the Project Site may serve as the escort provided the assigned duties will allow the supervisor to remain on the Project Site at all times that the CONTRACTOR has employees at work on the Project Site. The supervisor will submit proof of U.S. citizenship or as a resident alien authorization to work in the United States. BAE SYSTEMS reserves the right to withdraw escort privileges from the supervisor and to require the CONTRACTOR to furnish another individual to act as escort at no additional cost to BAE SYSTEMS.
    - iv. If the total labor force involved exceeds five (5) individuals, the CONTRACTOR must assign to the Project Site a sufficient number of employees whose time will be devoted *exclusively* to escorting and supervising the movement of the CONTRACTOR employees. Escort(s) must be mature, alert, competent individuals and of such physical and mental condition that they are able to remain with and escort the CONTRACTOR's employees at all times. Escort(s) must be able to furnish proof of U.S. citizenship or authorization to work in the United States as a resident alien. BAE SYSTEMS Security reserves the right to reject any individual designated as escort who is not performing or who is not capable of performing the escort duties.
    - v. All CONTRACTOR employees, who are designated as escorts, including supervisors, will be given a thorough indoctrination on security requirements by representatives of the BAE SYSTEMS Security Office. These escorts are accountable to BAE SYSTEMS and BAE SYSTEMS' Security Office for the proper fulfillment of escort duties for BAE SYSTEMS' CONTRACTOR. It is BAE SYSTEMS' prerogative, through periodic checks by the Security Office, to ascertain that the CONTRACTOR's escort is performing in accordance with security requirements.
    - vi. The responsibilities of the CONTRACTOR's security escort(s) are essentially as follows:
      - a. At the beginning and conclusion of the day's Work, escort the CONTRACTOR's employees (in a group) to and from the plant entrance and Project Site via the route designated by the BAE SYSTEMS Security Office.
      - b. Keep the BAE SYSTEMS Security Office informed regarding the telephone number at which the escort can be reached.

c. At the beginning of the Work, assign the nearest available restrooms or CONTRACTOR-supplied portable restrooms and drinking fountain for the use of the CONTRACTOR's employees and designate the most direct route to reach these facilities.

d. At the beginning of the Work, instruct and familiarize all of the CONTRACTOR's employees with the location of the nearest plant clinic, stretcher, fire extinguisher and fire alarm box and instruct all CONTRACTOR employees of their proper application and use.

e. When escorts deliver or return CONTRACTOR's employees to and from the Project Site, the escort must immediately verify that all CONTRACTOR's employees are accounted for.

f. Ensure that the CONTRACTOR's employees do not use or handle any of BAE SYSTEMS' tools, machinery or other property that are not authorized by the Contract and assure that all employees observe the "No Smoking" rule as well as all other rules for conduct and safety as designated by signs in the area.

g. At frequent intervals throughout the day, verify that the CONTRACTOR's employees are all accounted for and located in the required Work area.

h. Instruct CONTRACTOR's employees that the use of cameras, recording devices, radios, firearms, drugs, explosives, weapons, or intoxicants on BAE SYSTEMS property is prohibited.

i. Immediately report any infraction of security requirements to BAE SYSTEMS Security Office.

j. Instruct CONTRACTOR's employees of proper conduct and decorum on BAE SYSTEMS owned or leased property.

k. Perform escort duties in accordance with security requirements, including but not limited to, escorting only during work hours and work days and not in controlled spaces.

#### 11. INDEPENDENT CONTRACTOR RELATIONSHIP

a) CONTRACTOR's relationship to BAE SYSTEMS shall be that of an independent contractor and this Contract does not create an agency, partnership, or joint venture relationship between BAE SYSTEMS and CONTRACTOR or BAE SYSTEMS and CONTRACTOR personnel, including CONTRACTOR'S SUBCONTRACTOR'S. CONTRACTOR personnel, including SUBCONTRACTOR'S, engaged in performing Work under this Contract shall be deemed employees of CONTRACTOR and shall not for any purposes be considered employees or agents of BAE SYSTEMS. CONTRACTOR assumes full responsibility for the actions, omissions and supervision of such personnel while engaged in Work under this Contract. BAE SYSTEMS assumes no liability for such CONTRACTOR personnel.

b) Nothing contained in this Contract shall be construed as granting to CONTRACTOR or any personnel of CONTRACTOR rights under any BAE SYSTEMS benefit plan. CONTRACTOR shall provide and maintain all insurance and benefits required by law, including but not limited to workers' compensation insurance.

c) CONTRACTOR personnel: (i) will not remove BAE SYSTEMS or its Customer's assets from BAE SYSTEMS' or Customer's premises without BAE SYSTEMS written authorization; (ii) will use BAE SYSTEMS or Customer assets only as authorized in writing by the BAE SYSTEMS Procurement Representative for purposes of this Contract; (iii) will only connect with, interact with or use BAE SYSTEMS' computer networks and equipment, communications resources, programs, tools or routines as BAE SYSTEMS agrees, all at CONTRACTOR's risk and expense, and then only in compliance with applicable BAE SYSTEMS policies; and (iv) will not share or disclose user identifiers, passwords, cipher keys or computer dial port telephone numbers. BAE SYSTEMS may monitor any communications made over or data stored in BAE SYSTEMS computer networks and equipment or communications resources.

d) CONTRACTOR shall be responsible to BAE SYSTEMS for the acts and omissions of CONTRACTOR's employees and agents, CONTRACTOR's Sub-CONTRACTOR'S, and their agents, employees and subcontractors, and all other persons performing any of the Work, except public utility employees.

#### 12. SUBCONTRACTORS

a) The CONTRACTOR shall at all times select qualified vendors and SUBCONTRACTOR'S for performance of all subcontract work and the furnishing of materials and supplies. Prior to commencement of necessary procurement on a subcontract basis, BAE SYSTEMS reserves the right to refuse or reject any SUBCONTRACTOR or supplier. Nothing noted in any subcontract hereunder shall create any contractual relation between the SUBCONTRACTOR and BAE SYSTEMS, and, further, the rights of BAE SYSTEMS under this Contract shall not be nullified thereby.

b) No subcontract shall be made by the CONTRACTOR for performing any Work herein contracted for, without the prior written approval of BAE SYSTEMS. When required by Contract Documents, CONTRACTOR shall utilize the SUBCONTRACTOR'S identified herein.

c) The CONTRACTOR warrants that to the best of CONTRACTOR's knowledge, the SUBCONTRACTOR'S proposed by CONTRACTOR are reputable, skilled, reliable, competent, and qualified in the trade field in which the SUBCONTRACTOR'S are to perform on the Project.

d) By appropriate agreement, written where legally required for validity, the CONTRACTOR shall require each SUBCONTRACTOR, to the extent of the Work to be performed by the SUBCONTRACTOR, to be bound to the CONTRACTOR by terms of the Contract Documents, and to assume toward the CONTRACTOR all the obligations and responsibilities which the CONTRACTOR, by the Contract Documents, assumes toward BAE SYSTEMS or others as specified therein. Each SUBCONTRACTOR agreement shall preserve and protect the rights of BAE SYSTEMS or others as specified therein under the Contract Documents with respect to the Work to be performed by the SUBCONTRACTOR so the subcontracting thereof will not prejudice such rights, and shall allow to the SUBCONTRACTOR, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the CONTRACTOR that the CONTRACTOR, by the Contract Documents, has against BAE SYSTEMS. The CONTRACTOR shall make available to each proposed SUBCONTRACTOR, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the SUBCONTRACTOR will be bound, and, upon written request of the SUBCONTRACTOR, identify to the SUBCONTRACTOR, terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents.

e) CONTRACTOR shall be responsible for providing all SUBCONTRACTOR'S with sufficient drawings, specifications, addenda, and other documents necessary to inform SUBCONTRACTOR'S fully of the requirements of the Contract Documents which pertain to or which might otherwise affect SUBCONTRACTOR'S work.



- f) CONTRACTOR shall remove personnel of SUBCONTRACTOR'S from the Project upon written request of the BAE SYSTEMS. The CONTRACTOR shall be responsible for requiring each employee engaged on the Project Site to display such identification as may be approved and directed by BAE SYSTEMS. All prescribed identification shall immediately be delivered to BAE SYSTEMS for cancellation, upon the release of any employee. When required by BAE SYSTEMS, the CONTRACTOR shall obtain and submit fingerprints of all persons employed or to be employed on the Project. BAE SYSTEMS reserves the right to reject any of CONTRACTOR's employees or have CONTRACTOR reject any SUBCONTRACTOR'S employees whose conduct is unacceptable to BAE SYSTEMS or for any other just cause.

### 13. SUPERINTENDENCE

- a) The CONTRACTOR shall provide a competent superintendent with necessary assistants, sufficient and competent management and supervisory personnel on site subject to acceptance by BAE SYSTEMS and subject to continuing satisfaction to BAE SYSTEMS. Such superintendence and management shall efficiently supervise the Work and be responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work. If such personnel become unacceptable, BAE SYSTEMS will present the reasons for dissatisfaction to the CONTRACTOR in writing whereby the CONTRACTOR shall take immediate steps to replace such person(s).
- b) CONTRACTOR superintendence and/or management at the job site shall have the authority to commit the CONTRACTOR to agreements and amendments to this Contract to a sufficient monetary value that will assure the orderly progress of the Work. Upon acceptance of the Contract, CONTRACTOR shall provide BAE SYSTEMS with written notice as to designated personnel and their monetary authority and such authority shall be assumed to remain in force until written notice otherwise is received by BAE SYSTEMS.

### 14. LICENSED PERSONNEL

Any design, engineering, architectural, or other professional services incorporated as part of this Contract, which is to be performed by the CONTRACTOR, and which requires the employment of licensed personnel, will be performed only by licensed personnel. The CONTRACTOR will be held to the same degree of responsibility and liability that a licensed person would be responsible and liable. The CONTRACTOR will not be liable for any greater or lesser degree of care, skill or responsibility for such licensed services than would be imposed on licensed personnel had they dealt directly with BAE SYSTEMS.

### 15. OFFSET CREDIT/COOPERATION

All offset or countertrade credit value resulting from this Contract, and any lower tier subcontracts, shall accrue solely to the benefit of BAE SYSTEMS. SELLER shall cooperate with BAE SYSTEMS in the fulfillment of any foreign offset/countertrade obligations.

### Section 1B: Laws and Regulations

### 16. APPLICABLE LAWS

- a) Unless specifically identified otherwise on a PO or under a master-type agreement, which is part of this Contract, all matters arising from or related to it shall be governed by and construed in accordance with the law of the State from which this Contract is performed. If the work is performed

OCONUS, the law from the State from which this Contract is issued applies.

- b) (1) CONTRACTOR shall comply with all applicable laws, orders, rules, regulations, and ordinances. CONTRACTOR shall procure all licenses and permits, and pay all fees and other required charges necessary to conduct its business, all at CONTRACTOR's expense. CONTRACTOR shall carefully review the Contract Documents and if CONTRACTOR observes that any of the Contract Documents are at variance therewith in any respect, CONTRACTOR shall promptly notify BAE SYSTEMS in writing. CONTRACTOR shall be liable to BAE SYSTEMS for costs incurred by BAE SYSTEMS with respect to any such variance that CONTRACTOR could have observed and pointed out to BAE SYSTEMS but did not. CONTRACTOR shall be responsible for providing appropriate personal protective equipment (PPE) and fulfilling all other employer obligations as may be required by regulation, statute, or other appropriate authority.

(2) CONTRACTOR shall be responsible for compliance with all requirements and obligations relating to its employees under all applicable local, state, and federal statutes, ordinances, rules, and obligations including, but not limited to, employer's obligations under laws relating to: income tax withholding and reporting; civil rights; equal employment opportunity; discrimination on the basis of age, sex, race, color, religion, disability, national origin, or veteran status; overtime; minimum wage; social security contribution and withholding; unemployment insurance; employer's liability insurance; worker's compensation; veteran's rights; and all other employment, labor, or benefits related laws.

Effective 01 January 2012, if this CONTRACT applies to work conducted in the State of California, CONTRACTOR certifies compliance with the California Civil Code 1714.43, and CONTRACTOR shall require its lower-tiered CONTRACTOR'S to comply with California Civil Code 1714.43.

(3) BAE SYSTEMS is a federal government contractor subject to the nondiscrimination and affirmative action compliance requirements of Executive Order 11246, as amended, Executive Order 13672, as amended, the Rehabilitation Act of 1973, as amended, and the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended. BAE SYSTEMS is committed to compliance with these nondiscrimination and affirmative action requirements. As part of our efforts to comply with these laws and their implementing regulations, we have developed and implemented equal employment opportunity and affirmative action policies and programs, which are designed to ensure that all qualified applicants and employees are treated without regard to such factors as race, color, religion, sex, national origin, disability, veteran status, or any other reason prohibited by law.

In accordance with the implementing regulations of these laws BAE Systems' General Provisions serves as notification to SELLER about our nondiscrimination and affirmative action policies, and also "requests appropriate action" of SELLER to ensure full compliance throughout the subcontracting chain under related federal contract(s).

- i. To the extent applicable, the equal employment opportunity and affirmative action requirements set forth in 41 C.F.R. Part 60-1.4(a) (women and minorities), 41 C.F.R. Part 60-250.5(a) and Part 60-300.5(a) (covered veterans), and the employee notice requirements set forth in 29 C.F.R. Part 471, Appendix A to Subpart A, are hereby incorporated by reference into this Contract.
- ii. This contractor and subcontractor shall abide by the requirements of 41 CFR 60.741.5(a). This regulation prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in

employment qualified individuals with disabilities (If this procurement is  $\geq$  \$10,000.) Additionally, this contractor and subcontractor shall abide by the requirements of 41 CFR 60.300.5(a). This regulation prohibits discrimination against qualified protected veterans, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans (if this procurement is  $\geq$  \$100,000).

(4) If: (i) BAE SYSTEMS' contract price or fee is reduced; (ii) BAE SYSTEMS' costs are determined to be unallowable; (iii) any fines, penalties or interest are assessed on BAE SYSTEMS; or (iv) BAE SYSTEMS incurs any other direct costs or damages solely as a result of any violation of applicable laws, orders, rules, regulations, or ordinances committed solely by CONTRACTOR, its directors, officers, employees, agents, suppliers, or SUBCONTRACTOR'S at any tier, BAE SYSTEMS may proceed as provided for in subparagraph (b)(5).

(5) Upon the occurrence of any of the circumstances identified in subparagraph (b)(4) BAE SYSTEMS may make an offset reduction of corresponding amounts (in whole or in part) due CONTRACTOR under this Contract and/or may demand payment (in whole or in part) of the corresponding amounts. CONTRACTOR shall promptly pay amounts so demanded.

- c) CONTRACTOR represents and warrants that none of its officers, directors, employees, agents, CONTRACTOR'S, lower-tier SUBCONTRACTOR'S, or other related entities will provide to BAE SYSTEMS any information, which the disclosure or receipt of would violate the Procurement Integrity Act, 41 U.S.C. § 423, as currently amended. This includes third party bid or proposal information and source selection information, as defined by the Procurement Integrity Act and the FAR. Additionally, CONTRACTOR agrees to put in place effective controls that will ensure information that would violate the Procurement Integrity Act is not shared with BAE SYSTEMS.
- d) CONTRACTOR represents that each chemical substance constituting or contained in Work sold or otherwise transferred to BAE SYSTEMS hereunder is on the list of chemical substances compiled and published by the Administrator of the Environmental Protection Agency pursuant to the Toxic Substances Control Act (15 U.S.C. Sec. 2601 et seq.) as amended. Seller shall not deliver goods that contain any asbestos mineral fibers.
- e) CONTRACTOR agrees to submit Safety Data Sheets (SDS's) (formerly known as Material Safety Data Sheet) (U.S. Department of Labor Form OSHA-20, or equivalent), as prescribed in 29 CFR 1910.1200 (OSHA Hazard Communication Standard), for all potentially hazardous material, as defined in the Standard, five (5) days before delivery of the material to the Project Site. This obligation applies to all materials delivered under this Contract which will involve exposure to potentially hazardous materials or items containing these materials as defined in Federal Standard number 313 in effect on the date of delivery of the hazardous material. The Safety Data Sheets Sheet(s) must include the Contract number and be submitted to the BAE SYSTEMS Medical Department. Any RCRA or state-regulated hazardous waste generated while on BAE Systems property shall be transferred to the possession of BAE SYSTEMS for handling and disposal. Neither the requirements of this clause nor any act or failure to act by BAE SYSTEMS shall relieve the CONTRACTOR of any responsibility or liability for the safety of BAE SYSTEMS, CONTRACTOR, or Subcontractor personnel or property. The CONTRACTOR shall insert this clause, including this paragraph with

appropriate changes in the designation of the parties, in Subcontracts at any tier involving hazardous material.

- f) For orders \$500,000 and above to be substantially performed outside of the United States: CONTRACTOR shall comply with the policy, controls, and reporting requirements as defined in U.S. Executive Order, 25 September 2012, Strengthen Protections Against Trafficking In Persons In Federal Contracts, Sec. 2. Anti-Trafficking Provisions subsection (2).
- g) Certification Regarding Political Contributions, Fees, and Commissions Paid In Connection with Sales Subject to the Provisions of the Arms Export Control Act: CONTRACTOR represents that in accordance with 22 C.F.R. 130, neither CONTRACTOR nor its SUBCONTRACTOR'S at any tier have paid, offered or agreed to pay, or will pay or offer or agree to pay, in respect to the Work which are to be provided to BAE SYSTEMS under any Contract awarded, political contributions, fees, or commissions in amounts as specified in 22 C.F.R. 130.9.
- h) In compliance with Dodd-Frank Act Section 1502, CONTRACTOR agrees to SEC Reporting Requirements for Issuers Using Conflict Minerals. Conflict minerals are: columbite-tantalite (coltan), cassiterite, wolframite, and gold, which are used to finance conflict in the Democratic Republic of Congo or adjoining country.
- i) **CONFLICT OF INTEREST**
  - (a) Compliance with Laws: CONTRACTOR agrees to comply with all Federal, state and local laws and regulations as they relate to conflict of interest.
  - (b) CONTRACTOR Certifications: By acceptance of this Contract, CONTRACTOR makes the following certifications:
    - i) CONTRACTOR certifies that neither CONTRACTOR, CONTRACTOR'S employees, representatives, nor agents, if any, assigned to carry out its obligations hereunder is an official or employee of the U.S. Government or an active member of the armed forces, unless such dual activity is permissible under applicable laws and regulations and approval required by such laws or regulations has been obtained in writing, and such written approval has been submitted to BAE Systems.
    - ii) CONTRACTOR certifies that CONTRACTOR has made a full disclosure of each instance where CONTRACTOR or any of CONTRACTOR'S employees, representatives or agents is currently providing to BAE Systems' customer, supplier, or competitor, under any regulatory statute, regulation or enforcement action, services similar to those provided for hereunder. CONTRACTOR further agrees to make disclosure to BAE Systems prior to entering into any such arrangement in the future.
    - iii) CONTRACTOR agrees that if at any time, including performance under this Contract, there is a change of circumstances that could raise an issue as to the existence of a conflict of interest relating to the certifications in 17(i)(b) above, CONTRACTOR will immediately notify BAE Systems in writing of the circumstances involved. CONTRACTOR further agrees that, if any circumstances arise which cause BAE Systems to conclude, in its sole judgment, that CONTRACTOR may be involved in a conflict of interest, as described in 17(i)(a) and (b) above, BAE Systems may immediately terminate this Contract in accordance with the Termination for Default provisions of this Contract. The foregoing shall be in addition to any other rights and remedies BAE Systems may have under this Contract or at law.
    - iv) CONTRACTOR, and any employees, representatives, and agents of CONTRACTOR, if any, in performance under this Contract, shall not

solicit or receive any information, classified or unclassified, directly or indirectly, from the U.S. Government or any other source except in strict accordance with all laws, regulations and BAE Systems policies. In the event BAE Systems concludes, in its sole judgment, that a violation of this paragraph iv) has occurred, such a violation shall be considered a noncurable breach, and BAE Systems shall immediately terminate this Contract in accordance with the default provisions of this Contract. Such termination shall be in addition to any other rights and remedies BAE Systems may have under this Contract or at law.

- (c) CONTRACTOR further agrees to include this clause or an equivalent in all subcontracts or purchase orders issued hereunder.

**17. GRATUITIES/KICKBACKS/ETHICAL CONDUCT/STATUS**

- a) No gratuities (in the form of entertainment, gifts or otherwise) or kickbacks shall be offered or given by CONTRACTOR, to any employee, agent or representative of BAE SYSTEMS with a view toward securing favorable treatment as a supplier.
- b) BAE Systems may, by written notice to CONTRACTOR, terminate for default the right of CONTRACTOR to proceed under this order if BAE Systems has reasonable cause to believe that gratuities (in the form of entertainment, gifts or otherwise) or kickbacks were offered or given by CONTRACTOR, or any agent or representative of CONTRACTOR with a view toward securing this Contract or securing favorable treatment with respect to awarding or amending or the making of any determinations with respect to the performance of this Contract.
- c) In the event this Contract is terminated as provided in paragraph "b" above, BAE SYSTEMS shall be entitled to pursue the same remedies against the CONTRACTOR as BAE SYSTEMS could pursue in the event of a breach of a Contract
- d) BAE SYSTEMS maintains an ethics program that includes a written code of conduct, training and awareness for all employees, details of which can be found at [http://www.baesystems.com/article/BAES\\_020436/code-of-conduct-and-key-policies?\\_afLoop=4019190583000](http://www.baesystems.com/article/BAES_020436/code-of-conduct-and-key-policies?_afLoop=4019190583000). Failure to comply with the Global Code of Conduct shall be considered a material breach and shall be grounds for termination of this Contract.
- e) Notification of Debarments/Suspension Status. The CONTRACTOR shall provide immediate notice to the BAE SYSTEMS Procurement Representative in the event of the CONTRACTOR or a SUBCONTRACTOR being suspended, debarred, proposed for debarment or declared ineligible for the award of contracts by any Federal Agency, during the performance of this Contract.

**18. EXPORT CONTROL**

- a) CONTRACTOR shall comply with all applicable United States export control laws and regulations, including, but not limited to, the requirements of the Arms Export Control Act, 22 U.S.C. 2751-2799aa-2, the International Traffic in Arms Regulation (ITAR), 22 C.F.R. 120 et seq., the Export Administration Act, 50 U.S.C. app. 2401-2420, the Export Administration Regulations, 15 C.F.R. 730-774, and the regulations of the Office of Foreign Assets Control (31 C.F.R. Parts 500-595). CONTRACTOR shall obtain all required export licenses and agreements necessary to perform CONTRACTOR's Work, as applicable.

- b) CONTRACTOR shall comply with all applicable United States anti-boycott laws and regulations, including but not limited to, the requirements of the Export Administration Regulations, 15 C.F.R. 760, and the Internal Revenue Code, 26 U.S.C. 999, including the requirements on reporting anti-boycott requests to the U.S. Government. CONTRACTOR shall provide to BAE SYSTEMS within 30 days of submittal a copy of any anti-boycott report made to the U.S. Government that involves this Contract.
- c) Without limiting the foregoing, CONTRACTOR shall not transfer any export-controlled item, data or services, to include transfer to a person who is not a "U.S. Person" as defined in the ITAR (22 C.F.R. 120.15), without the authority of a United States Government export license, technical assistance agreement, or other authority. The restrictions on the transfer of export controlled data apply equally to data furnished by BAE SYSTEMS and to any such data incorporated in documents generated by CONTRACTOR. Additionally, no disclosure of data furnished by BAE SYSTEMS can be made unless and until BAE SYSTEMS has considered the request and provided its written approval through contractually authorized channels. CONTRACTOR will strictly comply with the conditions in any such approval and in the export license or other Government authorization for such disclosure.
- d) Further, a United States Government export license, export agreement, or applicable license exemption or exception shall be obtained by CONTRACTOR prior to the transfer of any export controlled item, data or services to any U.S. Person that is employed by any "Foreign person" within the meaning of 22 C.F.R. 120.16.
- e) CONTRACTOR shall notify in writing the BAE SYSTEMS Procurement Representative if any use, sale, import or export by BAE SYSTEMS of Work to be delivered under this Contract is restricted by any export control laws or regulations applicable to CONTRACTOR.
- f) CONTRACTOR shall immediately notify in writing the BAE SYSTEMS Procurement Representative if CONTRACTOR is listed in any Denied Parties List or if CONTRACTOR's export privileges are otherwise denied, suspended or revoked in whole or in part by any government entity or agency.
- g) If CONTRACTOR is engaged in the business of either exporting or manufacturing (whether exporting or not) defense articles or furnishing defense services, CONTRACTOR represents that it maintains an effective export/import compliance program in accordance with the ITAR and it is registered with the United States Office of Defense Trade Controls (unless covered by one of the exemptions set forth in 22 C.F.R. 122.1) as required by the ITAR
- h) Where CONTRACTOR is a signatory under a BAE SYSTEMS export license or export agreement (e.g. Technical Assistance Agreement, Manufacturing License Agreement), CONTRACTOR shall provide immediate written notification to the BAE SYSTEMS Procurement Representative in the event of changed circumstances affecting said license or agreement
- i) Failure of the United States Government or any other government to issue any required export or import license, or withdrawal/termination of a required export or import license by the United States Government or any other government, shall relieve BAE SYSTEMS of its obligations under this Contract. Provided that CONTRACTOR has diligently pursued obtaining such license and, through no fault of CONTRACTOR, such license has been denied, withdrawn, or terminated, CONTRACTOR shall also be relieved of its obligation under this Contract. In either event, this Contract may be terminated by BAE SYSTEMS without additional cost or other liability.
- j) If the technical data required to perform this Contract is subject to the United States International Traffic in Arms Regulations (ITAR), CONTRACTOR shall comply with all export licenses, and the following



- i. The technical data shall be used only in performance of Work required by this Contract; and
  - ii. The data shall not be disclosed to any Non-U.S. Person, including lower-tier SUBCONTRACTOR'S within the same country, unless said person is expressly authorized pursuant to an export license or export agreement. The restrictions on the disclosure of export-controlled data apply to both data furnished by BAE SYSTEMS and to any such data incorporated in documents generated by CONTRACTOR; and
  - iii. Any rights in the data may not be acquired by CONTRACTOR or any other Non-U.S. Person; and
  - iv. CONTRACTOR shall return, or at BAE SYSTEMS' direction, destroy all of the technical data exported to CONTRACTOR pursuant to this Contract upon fulfillment of its terms; and
  - v. Unless otherwise expressly directed by BAE SYSTEMS, CONTRACTOR shall deliver the Work only to BAE SYSTEMS or to an agency of the U.S. Government.
- k) In compliance with ITAR, CONTRACTOR is registered with the United States Office of Defense Trade Controls.
- l) See BAE SYSTEMS Ship Repair Inc. Addendum for additional terms applicable to this EXPORT CONTROL section for work performed for BAE SYSTEMS Ship Repair Inc. and its subsidiaries.
19. **DISPUTES/JURY WAIVER (See BAE SYSTEMS Ship Repair Inc. Addendum for additional terms applicable to this Disputes/Jury Waiver section for work performed for BAE SYSTEMS Ship Repair Inc. and its subsidiaries.)**
- a) All disputes arising from or related to this Contract, which are not disposed of by mutual agreement may be decided by recourse to an action at law or in equity in accordance with subparagraph b) of this provision. Until final resolution of any dispute hereunder, CONTRACTOR shall diligently proceed with the performance of this Contract as directed by the BAE SYSTEMS Procurement Representative.
  - b) BAE SYSTEMS and CONTRACTOR agree to timely notify each other of any claim, dispute or cause of action arising from or related to this Contract, and to negotiate in good faith to resolve any such claim, dispute or cause of action. To the extent that such negotiations fail, BAE SYSTEMS AND CONTRACTOR AGREE THAT ANY LAWSUIT OR CAUSE OF ACTION THAT ARISES FROM OR IS RELATED TO THIS CONTRACT SHALL BE FILED WITH AND LITIGATED ONLY IN A COURT OF COMPETENT JURISDICTION WITHIN THE STATE FROM WHICH THIS CONTRACT IS PERFORMED; AND BAE SYSTEMS AND CONTRACTOR EACH HEREBY CONSENT AND AGREE TO THE PERSONAL JURISDICTION AND VENUE OF ANY STATE OR FEDERAL COURT OF COMPETENT JURISDICTION LOCATED WITHIN THE STATE FROM WHICH THIS CONTRACT IS PERFORMED WITH RESPECT TO ANY SUCH CLAIM, DISPUTE OR CAUSE OF ACTION AND WAIVE ANY DEFENSE OR OBJECTION TO THE EXERCISE OF PERSONAL JURISDICTION AND/OR VENUE BY ANY SUCH COURT. IF THE CONTRACT IS OCONUS, THE STATE FROM WHICH THE CONTRACT IS ISSUED APPLIES. (For BAE SYSTEMS Ship Repair Inc. (and its subsidiaries) orders originating in

California, please see the BAE SYSTEMS Ship Repair Inc. Addendum for further Disputes language.)

- c) TO THE EXTENT PERMITTED BY APPLICABLE LAWS, BAE SYSTEMS AND CONTRACTOR EACH WAIVE ANY RIGHTS WHICH EITHER MAY HAVE TO TRIAL BEFORE A JURY OF ANY DISPUTE ARISING FROM, OR RELATED TO, THIS CONTRACT. CONTRACTOR AND BAE SYSTEMS FURTHER STIPULATE AND CONSENT THAT ANY SUCH LITIGATION BEFORE A COURT OF COMPETENT JURISDICTION SHALL BE NON-JURY.
- d) CONTRACTOR hereby agrees to waive all applicable statutes of limitations applicable to any BAE SYSTEMS action against CONTRACTOR under this PO until one (1) year after all such statutes applicable to any action by BAE SYSTEMS' Customer against BAE SYSTEMS based on alleged breaches of requirements of BAE SYSTEMS' higher-tier contract occurring, in whole or in part, by reason of the alleged actions or inactions of CONTRACTOR constituting noncompliance by CONTRACTOR with requirements of this PO; until one (1) year following the expiration of all applicable statutes of limitation applicable to BAE SYSTEMS' Customer's action against BAE SYSTEMS.

## 20 WAIVER, APPROVAL, AND REMEDIES

- a) Failure by BAE SYSTEMS to enforce any of the provision(s) of this Contract shall not be construed as a waiver of the requirement(s) of such provision(s), or as a waiver of the right of BAE SYSTEMS thereafter to enforce each and every such provision(s). Neither BAE Systems' preliminary or conceptual designs, review, approval or acceptance of, nor payment for, any of the services performed under this Contract shall be construed to act as a waiver of any rights under the Contract of any cause of action arising out of the performance of the Contract, and CONTRACTOR shall remain liable in accordance with applicable law for all direct and consequential damages to BAE Systems caused by CONTRACTOR's negligent or faulty performance of any of the services furnished hereunder
- b) BAE SYSTEMS's approval of documents shall not relieve CONTRACTOR from complying with any requirements of this Contract
- c) The rights and remedies of BAE SYSTEMS in this Contract are cumulative and in addition to any other rights and remedies provided by law or in equity.

## Section 1C: Construction Provisions

### 21 SITE INVESTIGATIONS AND REPRESENTATIONS

- a) The CONTRACTOR represents that it has investigated and satisfied itself as to the nature and location of the work, the general and local conditions, including but not limited to those bearing upon transportation, disposal, handling and storage of materials; the availability of labor, water, electric power, and roads; the uncertainties of weather, river stages, tides, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the Work and all other matters upon which information is reasonably obtainable and which can in any way affect the Work or the cost thereof under this Contract.
- b) The CONTRACTOR further represents that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site including all exploratory work done by BAE SYSTEMS, as well as from information presented by the drawings and specifications.
- c) Failure by the CONTRACTOR to acquaint itself with all available information shall not relieve it of responsibility for successfully performing the Work. BAE SYSTEMS assumes

no responsibility for any conclusions or interpretations made by the CONTRACTOR based on the information made available by BAE SYSTEMS or for any understandings reached or representations made by any of its officers, employees or agents prior to the execution of this Contract, unless (1) such understanding or representations are expressly stated in this Contract and (2) this Contract expressly provides that the responsibility therefor is assumed by BAE SYSTEMS

- d) Where alterations of and/or additions to existing construction are required under this Contract, the CONTRACTOR shall verify all dimensions and determine all existing conditions which may affect its work and shall be responsible for the accuracy of such dimensions and determinations.
- e) The parties acknowledge and agree that CONTRACTOR has represented that it has the requisite expertise to undertake the performance of the work contemplated by this Contract, and that BAE Systems, in reliance on such representation, has entered into this Contract.

## 22. SPECIFICATIONS AND DRAWINGS

- a) CONTRACTOR shall comply with all specifications and drawings set forth in the Statement of Work hereof. All Work called for in said specifications and drawings shall be accomplished in accordance with the applicable national and local codes and standards. If required by the Contract Documents, the CONTRACTOR is responsible for the preparation, by a licensed architect/engineer, of drawings setting forth in detail the requirements for the construction of the Work and Project, based upon all applicable codes, laws or regulations which have been enacted as of the date of this Contract. Construction of the Work and Project by CONTRACTOR shall be in accordance with these drawings and the specifications. Any approval by BAE SYSTEMS of the drawings shall be binding for layout and aesthetics and shall not relieve CONTRACTOR from CONTRACTOR's professional responsibility for the design and architectural integrity and function of the Work and Project.
- b) The CONTRACTOR shall keep on the site a copy of the drawings and specifications and shall at all times give BAE SYSTEMS access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In any case of discrepancy either in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to BAE SYSTEMS, who shall promptly make a determination in writing. Any adjustment by the CONTRACTOR without this determination shall be at its own risk and expense. BAE SYSTEMS shall furnish from time to time such detail drawings and other information as may be considered necessary, unless otherwise provided.
- c) Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed details of work but they shall be performed as if fully and correctly set forth and described in the drawings and specifications. CONTRACTOR shall carefully review the Contract Documents and if CONTRACTOR observes that any of the Contract Documents are at variance therewith in any respect, CONTRACTOR shall promptly notify BAE SYSTEMS in writing. CONTRACTOR shall be liable to BAE SYSTEMS for costs incurred by BAE

SYSTEMS with respect to any such variance that CONTRACTOR could have observed and pointed out to BAE SYSTEMS but did not.

- d) The CONTRACTOR shall check all drawings furnished him immediately upon their receipt and shall promptly notify BAE SYSTEMS of any discrepancies. Dimensions marked on drawings shall in general be followed in preference to scale measurements. Large scale detail drawings shall in general govern small scale drawings. The CONTRACTOR shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. When measurements are affected by field conditions, the CONTRACTOR shall take measurements notwithstanding the giving of scale or figure dimensions in the drawings.
- e) Deviations from the drawings and the dimensions therein given, whether or not error is believed to exist, shall not be made until written authority is obtained from BAE SYSTEMS.
- f) The CONTRACTOR shall lay out its work from base lines and grades established by BAE SYSTEMS and shall be responsible for all measurements in connection therewith. The CONTRACTOR shall, at its own expense, furnish all stakes, templates, platforms, equipment, and ranges and labor that may be required in setting and cutting, or laying out any part of the Work. The CONTRACTOR will be held responsible for the proper execution of the Work to such lines and grades as may be established or indicated by BAE SYSTEMS, and all stakes or other marks thus established shall be preserved by it until their removal is authorized by BAE SYSTEMS. BAE SYSTEMS will furnish, on request from the CONTRACTOR, all location and limit marks reasonably necessary for the conduct of the Work.
- g) All drawings shall become the property of BAE SYSTEMS, and BAE SYSTEMS shall be entitled, without further payment or liability to the CONTRACTOR and without further permission to use such drawings and to reproduce them; provided, however, the use of such drawings shall not imply a license to BAE SYSTEMS under any patent or shall not be construed as affecting the scope of any license otherwise granted to BAE SYSTEMS under any patent.
- h) The CONTRACTOR shall furnish to BAE SYSTEMS for all phases of the Work under specification sections wherein they apply, a sufficient number of submittals so that BAE SYSTEMS can retain copies. Submittals include, but are not limited to, complete sets of certified shop drawings, fabrication and welding procedures, specifications, reports, any applicable standards, and/or catalog data including vendors' delivery dates. Submittals will be marked "approved", "approved as noted", or "disapproved". Submittals marked "approved" or "approved as noted" need not be resubmitted. Submittals marked "disapproved" shall be resubmitted within seven (7) calendar days. All submittals shall be "approved" or "approved as noted" before starting fabrication.
- i) BAE SYSTEMS review and/or approval of submittals shall not relieve the CONTRACTOR from the responsibility of producing completed and installed Work in strict conformance with the Contract requirements. BAE SYSTEMS will not assume the responsibility for searching out deviations in the CONTRACTOR's submittals or any specifications indicated by the CONTRACTOR on submittals. It is understood that the review and/or approval by BAE SYSTEMS of the CONTRACTOR's submittals shall not be construed as a complete check as to their adequacy, nor as an agreement that the submittal will meet the requirements of the Contract. Such reviews and/or approvals shall in no way relieve the CONTRACTOR for any error or deficiency which may exist in the submittal as the CONTRACTOR shall be responsible for meeting all requirements of the Contract.



- j) In the event the Work set forth in the specifications and drawings does not comply with requirements within the applicable national or local codes and standards, the CONTRACTOR shall notify BAE SYSTEMS of such fact and BAE SYSTEMS may, by issuing a Change Order in accordance with the provisions of the Changes clause hereof, authorize compliance by the CONTRACTOR with the requirements of the applicable national or local codes and standards.
- k) The CONTRACTOR shall provide to BAE SYSTEMS, one (1) set of drawings which accurately portray "as-built" conditions of all construction items within the Contract, including schematic diagrams covering installations of all electrical, mechanical and pneumatic controls, if any. Each of these drawings shall be neatly and clearly marked-up (in red) to show all variations between the as-built construction and that indicated or specified by the Contract documents. Where a choice of material, equipment and/or methods is permitted herein, or where variations in the scope or character of the Work from that indicated or specified is permitted by subsequent change to the Contract, such choices or variations shall be reflected on these drawings. The as-built drawings shall include such supplementary notes, legends and details as may be necessary for legibility and clear portrayal of the as-built construction. All of the required as-built drawings will be delivered to BAE SYSTEMS within twenty (20) days after completion of the Work. The Work covered by such manuals shall not be reviewed or accepted for final payment until BAE SYSTEMS has reviewed those manuals. BAE SYSTEMS' designated personnel shall be given instructions by CONTRACTOR in the care, use, cleaning, maintenance and operation procedures for each item. CONTRACTOR shall be responsible for start-up of all systems and equipment specified in the Contract Documents
- l) The requirements of this clause relating to the approval of documents by BAE SYSTEMS shall apply with equal force and effect to all items required by this Contract to be submitted for either "review"/"approval" or language of similar import.

## 23. MATERIAL AND WORKMANSHIP

- a) Unless otherwise specifically provided in this Contract, all equipment, material, and articles incorporated in the Work covered by this Contract are to be new and of the most suitable grade for the purpose intended. CONTRACTOR shall provide and pay for all labor, tools, construction means, construction equipment materials, supplies, scaffolding, appliances, facilities, services, water, heat, air conditioning, utilities, transportation, and everything reasonably necessary and/or proper to complete the design and construction of the Project, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.
- b) Unless otherwise specifically provided in this Contract, reference to any equipment, material, article, or patented process, by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the CONTRACTOR may at its option, use any equipment, material, article, or process which, in the judgment of BAE SYSTEMS is equal to that named. Where equipment, materials, articles, or patented processes are referred to in the specifications as "equal to" a particular standard, the question of equality shall be determined by a duly authorized representative of BAE Systems. The CONTRACTOR shall furnish to BAE Systems for its approval the name of the manufacturer of machinery, the model number and other identifying data and information respecting the performance, capacity, nature

and rating of the machinery and mechanical and other equipment which it contemplates incorporating in the work. Approvals of equals will not relieve the CONTRACTOR of responsibility for adequate fulfillment of the various parts of the work, or from specified guarantees and maintenance standards. Except where this CONTRACTOR is responsible for Design under this Contract, all requests for substitution which may be offered shall have been submitted for approval prior to award of this Contract. Unless specified in the Schedule of Equipment, no such substitution will be permitted and the CONTRACTOR will be deemed to have hereby agreed to furnish only the brand names specified in the contract documents.

- c) CONTRACTOR will acknowledge receipt of materials and equipment purchased or provided by BAE SYSTEMS for installation under the Contract Documents and will provide storage and protection for such materials and equipment
- d) No materials or supplies for the Work contracted for shall be purchased by the CONTRACTOR or by any SUBCONTRACTOR working under CONTRACTOR which shall be subject to any chattel mortgage or under a conditional sale or other agreement in which an interest is retained by another party. The CONTRACTOR warrants that the title to all materials and supplies used by the CONTRACTOR in the performance of the Work hereunder shall be clear of all encumbrances of any nature whatsoever.
- e) Unless waived in writing by BAE SYSTEMS, all tests or trials shall be made in the presence of a duly authorized representative of BAE SYSTEMS. When the presence of the inspector is waived, sworn statements of the test made and results thereof shall be furnished to BAE SYSTEMS by the CONTRACTOR immediately after the tests are made. Costs of all tests and trials, including concrete aggregate and cylinder tests, and soil analysis, shall be borne by the CONTRACTOR.
- f) All work under this Contract shall be performed in a skillful and workmanlike manner consistent with the level of care and skill ordinarily exercised by industry-standard CONTRACTOR'S under similar circumstances. CONTRACTOR shall be totally responsible for the professional quality, technical accuracy, feasibility, and coordination of all designs, drawings, specifications, and other services furnished by or for CONTRACTOR hereunder.

## 24. OPERATIONS, STORAGE AREAS AND TEMPORARY CONSTRUCTION FACILITIES

- a) All operations of the CONTRACTOR (including storage of materials) upon BAE SYSTEMS premises shall be confined to areas authorized or approved by BAE SYSTEMS. No unauthorized or unwarranted entry upon or passage through, or storage or disposal of materials shall be made upon BAE SYSTEMS premises. Premises adjacent to the construction will be made available for use by the CONTRACTOR without cost whenever such use will not interfere with other CONTRACTOR'S' uses or purposes. The CONTRACTOR shall be liable for damage caused by it to BAE SYSTEMS premises. The CONTRACTOR shall hold and save BAE SYSTEMS, its officers and agents, free and harmless from liability of any nature or kind arising from any use, trespass or damages occasioned by its operations on premises of third persons
- b) CONTRACTOR shall confine operations at the Project Site to geographic areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the Project Site with any materials or equipment. No use will be made of the Project Site unless directly related to the Project.
- c) BAE SYSTEMS reserves the right to perform or allow the performance of Work related to the Project Site with BAE

SYSTEMS' own forces and to award separate contracts in connection with other portions of the Project or other Work on the Project Site under these or similar General Conditions. Unless coordination by Contractor is otherwise required by the Contract and its attachments, BAE SYSTEMS will provide for the coordination of the Work of BAE SYSTEMS' own forces and of each separate contractor with the Work of CONTRACTOR, who shall cooperate therewith. If CONTRACTOR claims that delay or additional cost is involved because of such action by BAE SYSTEMS, CONTRACTOR shall make such claim as provided elsewhere in the Contract Documents.

- d) When separate contracts are awarded for different portions of the Project or other Work on the Project Site, the term CONTRACTOR in the Contract Documents in each case shall mean the CONTRACTOR who executes each separate BAE SYSTEMS-CONTRACTOR contract.
- e) CONTRACTOR shall afford BAE SYSTEMS and separate CONTRACTOR'S reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall connect and coordinate CONTRACTOR's Work with BAE SYSTEMS and separate CONTRACTOR'S as required by the Contract Documents.
- f) If any part of CONTRACTOR's Work depends, for proper execution or results, upon the work of BAE SYSTEMS, or any separate contractor, CONTRACTOR shall, prior to proceeding with the Work, promptly report to BAE SYSTEMS any apparent discrepancies or defects in such other work that render the Work unsuitable for such proper execution and results. Failure of CONTRACTOR to report shall constitute an acceptance of BAE SYSTEMS' or separate contractor's work as fit and proper to receive CONTRACTOR's Work.
- g) Any costs caused by defective or ill-timed CONTRACTOR's Work shall be borne by the party responsible therefore.
- h) Should CONTRACTOR cause damage to the Work, equipment or property of BAE SYSTEMS or to other work on the Project Site, CONTRACTOR shall promptly remedy such damage.
- i) Should CONTRACTOR cause damage to the work or property of any separate contractor, CONTRACTOR shall, upon due notice, promptly attempt to settle with such other contractor by agreement or otherwise to resolve the dispute. If such separate contractor sues or initiates legal action or proceedings against BAE SYSTEMS on account of any damage alleged to have been caused by CONTRACTOR, BAE SYSTEMS shall notify CONTRACTOR who shall defend such proceedings at the CONTRACTOR's expense and if any judgment or award against BAE SYSTEMS arises from damage caused by the CONTRACTOR, CONTRACTOR shall pay or satisfy such judgment or award in addition to BAE SYSTEMS' cost and attorney's fees to defend such action. Should CONTRACTOR's Work or property be damaged by any separate contractor or BAE SYSTEMS, CONTRACTOR will be reimbursed for the reasonable cost to repair the damaged Work or for the actual damages to CONTRACTOR's property.
- j) Temporary buildings (storage sheds, shops, offices, etc.) may be erected by the CONTRACTOR only with the approval of BAE SYSTEMS and shall be built with labor and materials furnished by the CONTRACTOR without expense to BAE SYSTEMS. Such temporary buildings and/or utilities shall remain the property of the CONTRACTOR and will be removed by the

CONTRACTOR at its sole expense upon the completion of the Work.

- k) The CONTRACTOR shall use only established roadways or construct and use such temporary roadways as may be authorized by BAE SYSTEMS. Where materials are transported in the prosecution of the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state or local law or regulation. When it is necessary to cross curbing or sidewalks, protection against damage shall be provided by the CONTRACTOR and any damaged roads, curbs, or sidewalks shall be repaired by, and at the expense of the CONTRACTOR, to BAE SYSTEMS's satisfaction.
- l) Unless BAE SYSTEMS' Field Representative authorizes the use of existing toilet facilities, CONTRACTOR shall furnish adequate toilet facilities for its employees. Toilet facilities shall conform to all local sanitary regulations and be located as approved by BAE SYSTEMS.
- m) The Work shall be done without interference with the ordinary use of streets, easements and passages and the CONTRACTOR shall cooperate with other CONTRACTOR'S of BAE SYSTEMS and BAE SYSTEMS employees as may be required by the circumstances or directed by BAE SYSTEMS. The CONTRACTOR shall not commit or permit any act which will interfere with the performance of work by any other CONTRACTOR'S or BAE SYSTEMS employees whether at the site or not.
- n) Should the Project or any portion thereof not be completed within the Contract Schedule (as adjusted under the terms of the Contract Documents), BAE SYSTEMS or BAE SYSTEMS' lessees or assigns shall have the right to occupy any portion of the Project not so completed. In such event, CONTRACTOR shall not be entitled to any extra compensation on account of said occupancy by BAE SYSTEMS, or BAE SYSTEMS' lessees or assigns or normal full use of the Project, nor shall CONTRACTOR by BAE SYSTEMS', or BAE SYSTEMS' lessee's or assign's interfere in any way with said use of the Project, or be relieved of any of CONTRACTOR's responsibilities under the Contract Documents, including, without limitation, CONTRACTOR's obligation to complete the Project in accordance with the Contract Documents and the Contract Schedule.
- o) If a dispute arises between CONTRACTOR and separate CONTRACTOR'S as to their respective responsibility for cleaning up as required, BAE SYSTEMS may clean up and BAE SYSTEMS may charge the cost thereof to the CONTRACTOR or separate contractor as BAE SYSTEMS shall determine to be just.
- p) BAE SYSTEMS shall at all times have access to the Work and Project Site.

## 25 PRESERVATION OF EXISTING VEGETATION

- a) The CONTRACTOR will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site which do not unreasonably interfere with the construction as may be determined by BAE SYSTEMS. The CONTRACTOR will be responsible for all unauthorized cutting or damaging of trees and shrubs, including damage due to careless operation of equipment, stockpiling of materials or tracking of grass areas by equipment.
- b) Care shall be taken by the CONTRACTOR in felling trees, authorized for removal, to avoid any unnecessary damage to vegetation that is to remain in place. Any limbs or branches of trees broken during such operations, shall be trimmed with a clean cut and painted with an approved tree pruning compound. The CONTRACTOR may be required to replace or restore at its own expense all vegetation not protected and preserved as required herein that may be destroyed or damaged.

**26. PROTECTION OF MATERIALS AND WORK PERFORMED**

- a) The CONTRACTOR shall at all times protect and preserve all materials, supplies and equipment of every description (including property which may be BAE SYSTEMS furnished or owned) and all Work performed. All reasonable requests of BAE SYSTEMS to enclose or specially protect such property shall be complied with. If as determined by BAE SYSTEMS, material, equipment, supplies and Work performed are not adequately protected by the CONTRACTOR, such property may be protected by BAE SYSTEMS and the cost thereof may be charged to the CONTRACTOR or deducted from any payments due the CONTRACTOR
- b) CONTRACTOR is responsible for and required to remedy all damage or loss to any property, including property of BAE Systems or interruption of a utility service, caused in whole or in part by CONTRACTOR, CONTRACTOR's SUBCONTRACTOR or anyone employed, directed or supervised by CONTRACTOR
- c) The necessary materials, tools and equipment to be utilized in the performance of this Contract shall be consigned to and delivered to or by the CONTRACTOR at the site and shall be CONTRACTOR's responsibility to unload and safeguard from all hazards
- d) The CONTRACTOR shall protect the materials and Work from deterioration and damage during construction and shall store and secure flammable material from fire, remove oily rags, waste, and refuse from buildings each night and during cold weather furnish all heat necessary for the proper conduct of the work.
- e) CONTRACTOR is responsible for reporting and correcting all violations observed, to take all safety precautions, and implement all necessary safety programs in connection with the Work
- f) TO THE EXTENT PERMITTED BY LAW, CONTRACTOR AGREES THAT IT WILL NOT ASSERT ANY MECHANICS LIEN, OR ANY OTHER LABOR OR MATERIAL LIEN, AGAINST ANY PROPERTY OWNED BY OR IN THE CARE, CUSTODY OR CONTROL OF BAE SYSTEMS TO SECURE PAYMENT OF ANY AMOUNTS THAT MAY BECOME DUE TO CONTRACTOR FOR FURNISHING ANY LABOR OR MATERIAL IN PERFORMANCE OF THIS CONTRACT OR FOR PERFORMING ANY WORK ASSOCIATED THEREWITH. CONTRACTOR UNDERSTANDS THAT BY ACCEPTING THIS CONTRACT IT HAS WAIVED ITS RIGHTS (IF ANY) TO ASSERT A LIEN AND IT WILL BE PRECLUDED FROM EXERCISING THE MECHANICS LIEN RIGHTS IT MAY OTHERWISE BE AFFORDED UNDER APPLICABLE STATE LAW. CONTRACTOR SHALL COOPERATE IN PROVIDING AND FILING ANY WAIVERS AND/OR RELEASES OF LIEN THAT BAE SYSTEMS MAY REQUIRE. IN THE EVENT THAT APPLICABLE LAW DOES NOT PERMIT THE CONTRACTOR'S WAIVER OF LIENS IN ADVANCE, CONTRACTOR AGREES THAT IT SHALL FOREBEAR FROM FILING A LIEN UNLESS AND UNTIL IT COMPLETES THE WORK REQUIRED BY THE CONTRACT AND WILL PROVIDE A RELEASE AND WAIVER SIMULTANEOUS WITH FINAL PAYMENT UNDER THE CONTRACT.

**27. REMOVAL OF EQUIPMENT AND CLEANUP**

- a) The CONTRACTOR shall at all times keep the construction site, including storage areas, free from accumulations of waste material and rubbish; and prior

to completion of the Work remove any rubbish from and about the premises and all tools, scaffolding equipment, and materials not the property of BAE SYSTEMS. Outside clean up work shall be completed prior to time of seasonal landscaping work whether or not included as part of the Work. Upon completion of the construction, the CONTRACTOR shall leave the site in a clean, neat and workmanlike condition satisfactory to BAE SYSTEMS.

- b) Upon the completion of Work, the CONTRACTOR shall remove its equipment, tools, materials, and other articles from the site. Should the CONTRACTOR fail to take prompt action to this end, BAE SYSTEMS (at its option and without waiver of such other rights as it may have) may after thirty (30) days' notice to CONTRACTOR treat them as abandoned property and thereby dispose or use them as it deems appropriate.
- c) If CONTRACTOR fails to clean up at the completion of the Work, BAE SYSTEMS or BAE SYSTEMS' lessees or assigns may do so and the cost thereof shall be charged to the CONTRACTOR and may be deducted from the final payment.

**28. CONSTRUCTION SCHEDULE/TIME/DELAYS**

- a) The CONTRACTOR shall, prior to commencement of work, prepare and submit for approval a practicable schedule and report, showing the order in which the CONTRACTOR proposes to carry on the work, the date on which it will start the several salient features of the work (including procurement of materials, plant and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of Work scheduled for completion at any time and the value associated with the work. Once approved by BAE SYSTEMS, the CONTRACTOR shall be responsible for maintaining, monitoring and submit proposed revisions to the Contract Schedule due to changes made during the performance of the Work as approved by BAE SYSTEMS. All initial information presented will be updated and maintained current. There shall be no change in Contract Schedule without prior written BAE SYSTEMS approval. Costs associated with maintaining satisfactory updated Contract Schedule is the CONTRACTOR's responsibility.
- b) CONTRACTOR shall keep accurate and detailed written records of the progress of the Project during all stages of construction and submit monthly Contract Schedule updates. CONTRACTOR shall maintain a daily detailed log of all events occurring on the Project Site or connected with the progress of the Project.
- c) The CONTRACTOR shall furnish sufficient forces, construction plant and equipment, and shall work such hours, including night shifts and overtime operations, as may be necessary to insure the performance of the work in accordance with the approved progress schedule. If, in the opinion of BAE SYSTEMS, the CONTRACTOR falls behind the progress schedule, the CONTRACTOR shall take such steps as may be necessary to improve its progress, and BAE SYSTEMS may require it to increase the number of shifts, overtime operations, days of work, and/or the amount of construction equipment at no additional cost to BAE SYSTEMS. Any direction issued to the CONTRACTOR to provide premium labor in any form must first be coordinated with and approved by the BAE SYSTEMS Procurement Representative or Field Representative. Failure of the CONTRACTOR to comply with the requirements of this provision shall be grounds for determination by BAE SYSTEMS that the CONTRACTOR is not prosecuting the work with such diligence as will insure completion within the time specified in the contract. Upon such determination, BAE SYSTEMS may terminate the Contract, or any part thereof, in accordance with Provision 45, Termination for Convenience.
- d) Acceleration of the Contract Schedule may be requested in writing by BAE SYSTEMS. In such event, a separate



summary of the accelerated areas and cost of each, similar in format to those parts of the Contract Documents, is due from the CONTRACTOR if requested by BAE SYSTEMS. Float time used by BAE SYSTEMS is not acceleration or delay. Demands by BAE SYSTEMS that the CONTRACTOR comply with the Contract Schedule (as adjusted under the terms of the Contract Documents) do not constitute an acceleration

- e) Time is of the essence in the performance of the Work by CONTRACTOR and CONTRACTOR's Subcontractors. CONTRACTOR shall commence performance of the Work immediately upon receipt from BAE SYSTEMS of a separate written instruction to proceed and shall diligently and continuously pursue the Work so as to achieve Substantial Completion of the Work within the Contract Schedule. It is expressly understood and agreed that the time allotted for construction and completion of the Work is reasonable, taking into consideration the five (5) year average climatic conditions as reported at the nearest national weather station and industrial conditions (including, without limitation, labor conditions and availability) prevailing in the locale of the Project and the type of construction planned. In the event CONTRACTOR fails to complete the Work within the Contract Schedule (as that date may be adjusted under the terms of the Contract Documents), CONTRACTOR agrees to reimburse BAE SYSTEMS all damages and expenses incurred by BAE SYSTEMS due to CONTRACTOR's failure to complete the Work by such time.
- f) In the event that the CONTRACTOR anticipates a delay in performance under this Contract, it shall give written notice therefore to BAE Systems within five (5) working days, stating the reasons for the delay and identifying the actions, which CONTRACTOR is taking to minimize the impact of the delay.
- g) In the event delays in the performance of work under this Contract are due to the fault or negligence of CONTRACTOR, its SUBCONTRACTOR'S or its suppliers, or not otherwise an "excusable delay", CONTRACTOR shall, at its cost, take all necessary measures to recover schedule.
- h) Neither party shall be liable in damages for failure to perform under this Contract due to Excusable Delays (any causes beyond its control and without its fault or negligence, including, but not restricted to, acts of God, acts of War, Governmental Act, fires, floods, epidemics, quarantine restrictions, freight embargo, strikes deemed by BAE Systems to be not under the control of the CONTRACTOR, unusually severe weather, or delay of a SUBCONTRACTOR due to such causes unless the materials, supplies, or services to be furnished under the subcontract are reasonably procurable from other sources.)

#### 29. USE OF STRUCTURE BEFORE ACCEPTANCE

- a) BAE SYSTEMS or others may, during the performance of the Work, enter the structure for the purpose of performing any necessary Work. In doing so BAE SYSTEMS shall endeavor not to interfere with the CONTRACTOR and the CONTRACTOR shall not interfere with other work being done by or on behalf of BAE SYSTEMS.
- b) If, prior to completion and final acceptance of all the Work, BAE SYSTEMS takes possession of any structure (whether completed or otherwise) comprising a portion of the work with the intent of retaining possession thereof (as distinguished from temporary possession contemplating return to the CONTRACTOR), then, while BAE SYSTEMS is in possession, the CONTRACTOR, notwithstanding any

other provision herein, shall be relieved of the responsibility for loss or damage to structure other than that resulting from the CONTRACTOR's fault or negligence. Such taking of possession by BAE SYSTEMS shall not relieve the CONTRACTOR from any provisions of this Contract respecting such structure, other than to the extent specified in the preceding sentence, nor constitute a final acceptance of such structure.

#### 30. WARRANTY AND CORRECTION OF DEFECTS

- a) CONTRACTOR warrants to BAE SYSTEMS that all materials and equipment furnished under the Contract Documents will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by BAE SYSTEMS, CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of material and equipment being used in the Work. This warranty shall in no way be limited by the provisions of Paragraph "13.e.1" or "13.e.2" hereof and shall be assignable by BAE SYSTEMS as provided by the Contract.
- b) In addition to any other warranties in this Contract, the CONTRACTOR warrants that Work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the CONTRACTOR or any SUBCONTRACTOR or supplier at any tier.
- c) This warranty shall continue for a period of one (1) year from the date of final acceptance of the entire Work.
- d) The CONTRACTOR shall remedy at the CONTRACTOR's expense, any failure to conform or any defect. In addition, the CONTRACTOR shall remedy, at the CONTRACTOR's expense, any damage to BAE SYSTEMS-owned or controlled real or personal property, when that damage is the result of:
  - i. The CONTRACTOR's failure to conform to Contract requirements; or
  - ii. Any defect of equipment, material, workmanship, or design furnished.
- e) The CONTRACTOR shall restore any Work damaged in fulfilling the terms and conditions of this clause. The CONTRACTOR's warranty with respect to work repaired or replaced will run for one (1) year from the date of repair or replacement. This time period relates only to the specific obligation of the CONTRACTOR to correct the Work and has no relationship to the time within which CONTRACTOR'S obligation to comply with the Contract Documents or applicable provisions of law.
- f) BAE SYSTEMS shall notify the CONTRACTOR, in writing, within a reasonable time after the discovery of any failure, defect, or damage.
- g) If the CONTRACTOR fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, BAE SYSTEMS shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the CONTRACTOR's expense
- h) With respect to all warranties, expressed or implied, from SUBCONTRACTOR'S, manufacturers, or suppliers for work performed and materials furnished under this Contract, the CONTRACTOR shall:
  - i. Obtain all warranties that would be given in normal commercial practice;
  - ii. Require all warranties to be executed, in writing, for the benefit of BAE SYSTEMS;
  - iii. Enforce all warranties for the benefit of BAE SYSTEMS

- i) All SUBCONTRACTOR warranties shall inure to the benefit of BAE SYSTEMS and its assigns.
- j) This warranty shall not limit BAE SYSTEMS' rights under the Inspection and Acceptance clause of this Contract with respect to latent defects, gross mistakes, or fraud.
- k) The remedies provided above shall not be restrictive of, but shall be cumulative and in addition to, all other remedies of BAE SYSTEMS.

### 31. INSPECTION AND ACCEPTANCE

- a) The CONTRACTOR shall provide and maintain an inspection system in accordance with sound business practice and as may be otherwise provided in this Contract.
- b) All material and workmanship furnished by the CONTRACTOR, its SUBCONTRACTOR'S and suppliers shall be subject to inspection, examination and test by BAE SYSTEMS at reasonable times, to the extent practicable, during manufacture or construction and at any and all places where such manufacture or construction is carried on. BAE SYSTEMS may also inspect the plant or plants of the CONTRACTOR or of any of its SUBCONTRACTOR'S and suppliers engaged in the performance of this Contract. The CONTRACTOR and its SUBCONTRACTOR'S, without additional charge, shall provide promptly all reasonable data, facilities, labor, materials, and assistance for BAE SYSTEMS's inspectors' performance of their duties. All inspections and tests shall be performed in such manner as not to unduly delay the work. The CONTRACTOR shall be charged with any additional cost of inspection when materials and workmanship are not ready at the time specified for inspection. No inspection or test made prior to final inspection and acceptance shall relieve the CONTRACTOR from responsibility for defects or other failure to meet the requirements of this Contract.
- c) If the Contract Documents, laws, ordinances, rules, regulations or orders of any authority having jurisdiction require any Work to be inspected, tested or approved, CONTRACTOR shall give BAE SYSTEMS timely notice of CONTRACTOR's readiness and of the date arranged so BAE SYSTEMS may observe such inspection, testing or approval. CONTRACTOR shall bear all costs of such inspections, test or approvals conducted at the direction of authorities having jurisdiction. Required certificates of inspection, testing or approval shall be secured by CONTRACTOR and promptly delivered to BAE SYSTEMS.
- d) Should it be considered necessary or advisable by BAE SYSTEMS at any time before final acceptance of the entire Work to make an examination of work already completed, by removing or tearing out same, the CONTRACTOR shall upon request promptly furnish all necessary facilities, labor and material. If such Work is found to be defective or nonconforming in any material respect, the CONTRACTOR shall defray all the expenses of such examination and of satisfactory reconstruction.
- e) When the CONTRACTOR considers that the Work, or a designated portion thereof which is acceptable to BAE SYSTEMS and is substantially complete as defined herein, the CONTRACTOR shall prepare for submission to BAE SYSTEMS a list of items to be completed or corrected. The failure to include any item on such list does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the Contract Documents. When BAE SYSTEMS on the basis of inspection determines that the Work or

designated portion thereof is substantially complete, BAE SYSTEMS will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of BAE SYSTEMS and the CONTRACTOR for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the CONTRACTOR shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to CONTRACTOR for CONTRACTOR's written acceptance of the responsibilities assigned to CONTRACTOR in such Certificate.

- f) BAE SYSTEMS shall have the right to reject defective material or workmanship or to require its correction. Rejected workmanship shall be immediately corrected and rejected material shall be immediately replaced with proper material at CONTRACTOR's sole expense. The CONTRACTOR shall promptly segregate and remove the rejected material from the premises. If the CONTRACTOR fails to proceed at once with the replacement of rejected material or the correction of defective workmanship, BAE SYSTEMS may, at its sole discretion, (i) by contract or otherwise, replace such material or correct such workmanship and charge to the CONTRACTOR the cost occasioned BAE SYSTEMS thereby; (ii) without further notice terminate this Contract for default, in accordance with the clause hereof titled "Termination for Default"; or (iii) require a reduction in price which is equitable under the circumstances. BAE SYSTEMS may also charge the CONTRACTOR for any additional cost of inspection or test when prior rejection makes reinspection necessary.
- g) When CONTRACTOR deems the Work finally complete, CONTRACTOR shall give BAE SYSTEMS notice thereof in writing. After receipt of such notice, BAE SYSTEMS will determine if the Work has been completed according to the terms of the Contract and, if so, will notify CONTRACTOR in writing of acceptance thereof as provided below. If the Work is incomplete, BAE SYSTEMS will notify CONTRACTOR of the defects and/or omissions, and CONTRACTOR shall repeat the procedure stated herein until the Work has been completed and accepted. BAE SYSTEMS may also charge CONTRACTOR for any costs of additional inspection and/or transportation when rejection makes reinspection necessary.
- h) Final acceptance of the Work will be confirmed by Letter of Acceptance issued by BAE SYSTEMS promptly after being satisfied that all requirements of the Contract have been met, and presentation of a complete and executed Final Release of All Claims against BAE SYSTEMS and Waiver of Lien. In addition to any waiver or release of lien otherwise provided for in the Contract Documents, CONTRACTOR hereby irrevocably waives and releases, and agrees to require an identical waiver and release from all SUBCONTRACTOR'S, any right to claim, assert or pursue any lien or attachment of any nature whatsoever upon any equipment or property owned, leased or used by, or under the control of BAE SYSTEMS.
- i) Neither inspection by BAE SYSTEMS, or by any of BAE SYSTEMS' duly authorized representatives; nor any order, measurement, or certificate by BAE SYSTEMS; nor any order by BAE SYSTEMS for the payment of money, nor final payment hereunder; nor acceptance of any Work or any extension of time; nor any possession taken by BAE SYSTEMS or BAE SYSTEMS' lessees or assigns, shall operate as a waiver of any provision of the Contract Documents of any right of BAE SYSTEMS or others as specified thereunder or of any right to damages under the Contract Documents or under law. Any waiver by BAE SYSTEMS or BAE SYSTEMS' lessees or assigns of any breach of the Contract Documents shall not be held to be a waiver of any other or subsequent breach, and any waiver by BAE SYSTEMS of any right to terminate the Agreement shall

not be held to be a waiver or any breach of the Contract Documents, but BAE SYSTEMS and BAE SYSTEMS' lessees or assigns retain all of their rights to recover damages therefor.

- j) In addition to any waiver or release of lien otherwise provided for in the Contract Documents, CONTRACTOR hereby irrevocably waives and releases, and agrees to require an identical waiver and release from all SUBCONTRACTOR'S, any right to claim, assert or pursue any lien or attachment of any nature whatsoever upon any equipment or property owned, leased or used by, or under the control of BAE SYSTEMS.

### 32. SUSTAINABLE DEVELOPMENT

BAE SYSTEMS operates a Sustainable Development Policy. The details of our Sustainable Development Policy can be found at ([www.baesystems.com](http://www.baesystems.com)). We expect and encourage all our suppliers to embrace similar standards to our own and will work with them to share best practice and stimulate improved performance where needed.

## **Section 1D: Liability and Indemnification**

### 33. INDEMNIFICATION

In addition to, and without limiting, the indemnification provisions contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

- a) BOTH PARTIES SHALL INDEMNIFY, HOLD HARMLESS AND, AT THE ELECTION OF THE OTHER PARTY, DEFEND THE OTHER PARTY, ITS DIRECTORS, OFFICERS, EMPLOYEES, AGENTS, AND BENEFITS PLANS FROM AND AGAINST ALL LOSSES, COSTS, CLAIMS, PENALTIES, CAUSES OF ACTION, DAMAGES, LIABILITIES, FEES, AND EXPENSES, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES, ALL EXPENSES OF LITIGATION AND/OR SETTLEMENT, AND COURT COSTS (HEREINAFTER COLLECTIVELY REFERRED TO AS "CLAIMS"), ARISING FROM OR RELATED TO:
- (1) ANY INJURY, INCLUDING BUT NOT LIMITED TO DEATH, TO ANY PERSON(S), OR DAMAGE TO PROPERTY, ARISING FROM OR RELATED TO OR CAUSED OR CLAIMED TO HAVE BEEN CAUSED BY THAT PARTY'S OWN ACTS OR OMISSIONS OR THAT OF, ITS OWN DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS, OR ANY OTHER PERSON OR ENTITY DIRECTLY OR INDIRECTLY EMPLOYED BY THAT PARTY, WITH RESPECT TO OR IN CONNECTION WITH SERVICES UNDER THIS CONTRACT.
  - (2) ANY CLAIMS, MADE BY A PARTY'S DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS (EXCEPT CLAIMS FOR PERSONAL INJURY OR DEATH ARISING FROM GROSS NEGLIGENCE OR INTENTIONAL TORTS ON THE PART OF BAE SYSTEMS) AGAINST THE OTHER PARTY OR ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS IN EITHER THEIR OFFICIAL OR INDIVIDUAL CAPACITIES.
  - (3) ALLEGED IMPROPER CONDUCT OF ANY NATURE OR TYPE, INCLUDING, BUT NOT LIMITED TO, PHYSICAL, MENTAL OR SEXUAL ABUSE OR HARASSMENT,

INVASION OF BODILY INTEGRITY, VIOLATION OF CIVIL RIGHTS, AND/OR DISCRIMINATION, BY OR ATTRIBUTABLE TO ANY OF A PARTY'S DIRECTORS, OFFICERS, EMPLOYEES, AGENTS, SUPPLIERS OR SUBCONTRACTOR'S.

- (4) A PARTY'S FAILURE TO PAY ANY OF ITS OWN EMPLOYEES, AGENTS, SUPPLIERS, OR SUBCONTRACTORS, FOR SERVICES RENDERED OR MATERIALS SUPPLIED UNDER THIS CONTRACT.
  - b) CONTRACTOR shall notify BAE SYSTEMS as soon thereafter as is practicable, of any Claims arising from or related to subparagraphs 35 (a)(1)-(4) above. CONTRACTOR shall not settle, adjust, or compromise any such claim or any action or proceeding arising therefrom without the written approval of BAE SYSTEMS which shall not be unreasonably withheld. BAE SYSTEMS further agrees to cooperate with any investigation of such Claims and to provide CONTRACTOR any information reasonably available to BAE SYSTEMS (not of a classified, confidential or privileged nature), and reasonably necessary for the investigation or defense of such Claims.
  - c) As an additional and independent covenant of the Contract Documents, CONTRACTOR shall procure, as additional protection to BAE SYSTEMS, an independent indemnification and hold harmless agreement from each SUBCONTRACTOR, providing for the protection set forth in clause "a)" above for the acts or omissions of such SUBCONTRACTOR.
  - d) In any and all claims against BAE SYSTEMS by any employee of CONTRACTOR, SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable, the indemnification obligation of CONTRACTOR and any SUBCONTRACTOR under clause 35a.1)" and "35.a.2)" shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for them under Workmen's Compensation Acts, Disability Benefit Acts or other employee benefit acts.
  - e) CONTRACTOR shall agree to notify BAE SYSTEMS as soon thereafter as is practicable, of any claim asserted against BAE SYSTEMS arising out of any occurrence covered by insurance policies, and CONTRACTOR shall have the right and opportunity to settle, adjust, compromise, resist or amend such claim or any action or proceeding arising thereafter BAE SYSTEMS further agrees to cooperate with any investigation of such claim and provide to CONTRACTOR any information to which BAE SYSTEMS has access (not of a classified, confidential or privileged nature), deemed necessary for the investigation or defense of such claim.
34. **BONDS**  
If this Contract exceeds \$25,000 the following provisions apply:
- a) Payment Bonds - The CONTRACTOR shall furnish a payment bond with good and sufficient surety or sureties on an approved BAE SYSTEMS form for the protection of persons furnishing material or labor in connection with the performance of the Work under this Contract. The penal sum of such payment bond shall be 100% of the Contract price.
  - b) Performance Bonds - The CONTRACTOR shall furnish a performance bond with good and sufficient surety or sureties on an approved BAE SYSTEMS form in connection with the performance of the Contract Work. The penal sum of such performance bond shall be 100% of the Contract price.
  - c) Date of Bonds - Bonds required hereunder shall be dated before or as of the same date as this Contract and shall be furnished by the CONTRACTOR to BAE SYSTEMS at the time of execution of this Contract.
  - d) Additional Bond Security - If any surety upon any bond furnished in connection with this Contract becomes unacceptable to BAE SYSTEMS, or if the surety fails to furnish reports as to his financial condition as requested by BAE SYSTEMS, the



CONTRACTOR shall promptly furnish additional security as shall be required to protect the interests of BAE SYSTEMS and of persons supplying labor or materials in the prosecution of the Work contemplated by this Contract.

- e) Any surety, furnishing a bond hereunder, shall be bound by the terms of the Contract.
- f) The duty of securing required bonds for this Contract and riders thereto shall be upon the CONTRACTOR.
- g) In the event any changes, alterations, modifications, or amendments are made from time to time to this Contract or plans or specifications, subsequent to the date of bonds furnished hereunder, the CONTRACTOR shall secure from the Surety a Bond rider to the effect that the Surety waives notice and Right of Discharge by reason of such action.
- h) Bonds will also contain a provision to the effect that if the CONTRACTOR fails to give the Surety notice of changes, alterations, modifications, or amendments to this Contract, Surety shall not be released of liability under existing bonds or any riders issued thereto. BAE SYSTEMS shall have the right to withhold any payments due the CONTRACTOR hereunder until such time as the CONTRACTOR secures the bonds required or riders thereto, and the same have been approved by BAE SYSTEMS
- i) If this Contract is \$25,000 or less or the bond is specifically waived by BAE SYSTEMS, the following provision applies:  
In consideration of the waiver of the bond requirement, CONTRACTOR for itself and CONTRACTOR's Sub-CONTRACTOR'S, hereby expressly waives the right to file any lien or claim against the Project Site; further, that if in violation thereof, there shall be any lien, or other claim for monies due or to become due for which if established, BAE SYSTEMS might be liable, and which would be chargeable to the CONTRACTOR, CONTRACTOR shall immediately satisfy or bond the same, or BAE SYSTEMS shall have the right to bond said lien or claim or otherwise discharge the same and to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify BAE SYSTEMS against such lien or other claim, with interest, together with the expense incident to discharging such lien or claim or defending suit to enforce such lien or other claim, including any premiums charged for a bond and any attorney's fees and disbursement all of which the CONTRACTOR agrees to pay.

### 35. INSURANCE

OCIP LANGUAGE (Contractor Insurance requirements only)  
Insurance Requirements:

General Contractor shall purchase and maintain for all times during the performance of the Work and the term of this Agreement and for such extended term as required, at its sole expense, the following insurance, from companies authorized to do business in the state and jurisdiction where the Project is located.

General Contractor must ensure that its Subcontractors or delegates have comparable insurance with limits as shown below, unless the BAE Systems consents in writing to an exception.

Enrolled Parties shall provide the following insurance, as more particularly detailed below:

For all operations off the Project Site (as defined by the OCIP Policies):

General Liability and Excess Liability insurance;

For all operations, both on and off the Project Site,

Automobile Liability insurance;  
Workers' Compensation and Employers Liability;  
Excess Liability;  
Pollution Liability;  
Property insurance; and

For all operations both on and off the Project Site after substantial completion of the Enrolled Party's Work: Automobile Liability, Worker's Compensation and Employer's Liability, General Liability and Excess Liability insurance;

Excluded Parties shall provide the following insurance, as more particularly detailed in Section 12:

For all operations on and off the Project Site:

- 1 General Liability and Excess Liability insurance;
2. Automobile Liability insurance;
- 3 Workers' Compensation and Employers Liability;
4. Excess Liability;
5. Pollution Liability;
- 6 Property insurance

Commercial Automobile Liability Contractor shall provide and carry Automobile Liability insurance, (with no exclusion for terrorism), for all owned, non-owned and hired vehicles with limits of not less than \$1,000,000 Combined Single Limit each occurrence for bodily injury and property damage to the extent that such vehicles are used to transport employees or other workers and materials to and from Project site. This insurance coverage must include all automotive and truck equipment used in the performance of the Work, both on and off the Project Site, including the loading, unloading and maintenance of such vehicles. The commercial automobile policy shall be further endorsed to:

A waiver of subrogation in favor of BAE Systems, Inc. and its, subsidiaries, directors, officers and employees.

Include an MCS-90 endorsement if the contractor or subcontractor hauls hazardous materials or waste

Workers' Compensation and Employers Liability - Contractor shall provide and carry Workers' Compensation insurance and Employers Liability insurance, with coverage, limits and coverage extensions as follows:

Workers Compensation insurance complying with the statutory requirements of the jurisdiction in which the Project is located and the Work is performed

Employers Liability insurance with limits of \$1,000,000 bodily injury by accident (each accident); \$1,000,000 bodily injury by disease (policy limit); and \$1,000,000 bodily injury by disease (each employee)

A waiver of subrogation in favor of BAE Systems, Inc. and its, subsidiaries, directors, officers and employees.

All sole proprietors, partners, officers, executives, and members shall not be excluded from coverage. Any person that elects to exclude themselves from coverage shall not be allowed at the Project.

Terms and conditions shall include:

USL&H where applicable

Jones Act where applicable

All states endorsement - where applicable

Certificate must clearly identify that coverage applies in the State in which the Project is located.

Commercial General Liability - Contractor shall provide and carry "Occurrence Based" Commercial General Liability ("CGL") insurance using the Insurance Service Office (ISO) policy form CG 00 01 04 13 or such form as provides equivalent coverage, (with no exclusion for terrorism), including Broad Form Property Damage, Premises and Operations coverage, Products and Completed Operations coverage, Personal Injury coverage, and Blanket Contractual Liability coverage. Required coverage limits, which will not be eroded by defense costs, will be: \$1,000,000 Per Occurrence; \$2,000,000 General Annual Aggregate (Other than Products/Completed

Operations); \$2,000,000 Products/Completed Operations Annual Aggregate; and \$1,000,000 Personal and Advertising Injury Limit per Occurrence and in the Annual Aggregate. The Commercial General Liability Policy shall be further endorsed to:

A waiver of subrogation in favor of BAE Systems, Inc. and its subsidiaries, directors, officers and employees. The Annual Aggregate shall apply on a per project basis. Defense costs shall be in addition to and not erode the limits of liability.

General liability coverage shall be maintained and the Contractor shall provide completed operations coverage for a period of five (5) years following Final Completion of the Project or for the period equal to the Statute of Repose in the jurisdiction where the Project is located, whichever is longer.

Policies for Contractor and Subcontractors shall not contain exclusions for coverage of any of the following: Multi-Residential Construction, Apartment Construction, Explosion, Collapse and Underground hazard; contractual coverage for work within 50 feet of railroad property, State and Political subdivision.

**Umbrella / Excess Liability** - Contractor shall provide and carry an "Occurrence Based" Excess Liability (Umbrella) insurance, (with no exclusion for terrorism), which shall be written on no less than a follow form above the general liability, automobile liability, and employers liability coverages required by this Exhibit. As respects the General Contractor, the minimum required limits will be \$20,000,000 per occurrence and in the annual aggregate, including coverage for Products Liability and Completed Operations. As respects lower tier Subcontractors, the minimum required limits will be \$5,000,000 per occurrence and in the annual aggregate. The Umbrella / Excess Liability Policy shall be further endorsed to:

The Annual Aggregate shall apply on a per project basis. Defense costs shall be in addition to and not erode the limits of liability.

The General Liability, Employers' Liability, and Automobile Liability limit requirements may be met by primary coverage or combination of primary and umbrella/excess liability policies.

**Umbrella / Excess Liability** coverage shall be maintained and the Contractor shall provide completed operations coverage for a period of five (5) years following Final Completion of the Project or for the period equal to the Statute of Repose in the jurisdiction where the Project is located, whichever is longer.

Policies for Contractor and Subcontractors shall not contain exclusions for coverage of any of the following: Multi-Residential Construction, Apartment Construction, Explosion, Collapse and Underground hazard; contractual coverage for work within 50 feet of railroad property, State and Political subdivision.

**Pollution Liability** - Contractor shall procure and maintain broad form Contractor's Pollution Liability insurance covering bodily injury, property damage abatement/cleanup, repair and defense costs resulting from liability arising out of pollution conditions. Pollution liability coverage shall have limits no less than the following amounts: \$5,000,000 per occurrence; and \$5,000,000 annual aggregate. The Pollution Liability Policy shall:

Provide pollution coverage for exposures including but not limited to exposures arising from silica, water intrusion,

petroleum, petroleum-related products, asbestos, lead paint, tank removal, removal of contaminated soil, EIFS, bacteria, mold, and removal of any other pollutants.

The **Pollution Liability** insurance shall cover the Contractor's liability during the construction, installation, removal, storage, encapsulation, transport and disposal of hazardous waste. The policy shall include coverage for on-site and off-site bodily injury and loss of, damage to, or loss of use of property, directly or indirectly arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gas, waste materials or other irritants, contaminants, or pollutants into or upon the land, the atmosphere or any water course or body of water, whether it be gradual or sudden and accidental.

A waiver of subrogation in favor of BAE Systems, Inc. and its subsidiaries, directors, officers and employees.

**Pollution Liability** coverage shall be maintained and the Contractor shall provide completed operations coverage for a period of five (5) years following Final Completion of the Project or for the period equal to the Statute of Repose in the jurisdiction where the Project is located, whichever is longer.

**Professional Errors and Omissions (E&O).** If the Agreement includes design or engineering activities, Contractor shall provide Professional Liability Insurance (including but not limited to contractual liability coverage), with a retroactive date prior to commencement of work on the Project, to cover claims arising out of the performance of professional services caused by the negligent acts, error, or omissions of the Contractor. Contractor shall provide minimum limits of \$1,000,000 per claim and \$3,000,000 in the aggregate. Insurance shall be maintained for a period of not less than three (3) years after final completion of the entire Project (regardless of any earlier completion of the Work) or such longer period as may be required by BAE Systems, Inc. and its subsidiaries, directors, officers and employees. This requirement is satisfied if Contractor:

- Requires subcontractors, who are responsible for design or engineering activities, to provide Professional E&O insurance in amounts commensurate with the above, unless BAE consents in writing to an exception;
- Self-insures when performing design or engineering activities.

**Property and Contractors equipment insurance.** The Contractor shall procure and maintain at the Contractor's own expense, insurance to cover the replacement cost value of all contractor's and contractor's employees owned or leased property tools and equipment brought onto BAE Systems' locations, including but not limited to hoists, sheds, tools, scaffolds and other construction equipment.

#### General Requirements For Contractor-Provided Insurance

The aforementioned Contractor-provided insurance policies must be maintained with insurers having a minimum A.M. Best rating of "A-VII" throughout the term of this Agreement and as otherwise stated herein. All of the aforementioned Contractor-provided insurance coverage shall be primary to and noncontributory with any coverage BAE Systems, Inc. may have. Contractor shall be responsible for all defense costs and deductibles in the event that their policies do not cover same.

All required policies shall provide BAE Systems, Inc. with 30 days' written notice of any cancellation, interruption or material reduction in coverage.

Contractor shall provide BAE Systems, Inc. a Certificate(s) and copies of specific policy forms and endorsement (Waiver of Subrogation and Written Notice of Cancellation) required herein prior to commencing the Work, evidencing the coverages described herein. Contractor is responsible for ensuring that certificates and endorsements provided to Owner accurately reflect the coverage required herein and are current and in effect for all periods required herein.



Replacement Certificates of Insurance shall be provided for all required insurance that is renewed or replaced during the term of this Agreement within five (5) calendar days of renewal or replacement. Certificates of Insurance evidencing the continuation of completed operations coverage for the required period following completion of the Work shall be provided upon any renewal or replacement.

The insurance requirements under this Exhibit are considered minimum. BAE Systems, Inc. assumes no responsibility for the adequacy of the insurance in covering the Contractor and Subcontractors for potential liabilities under this Agreement. Additionally, the requirements for insurance described herein shall in no way be interpreted as relieving, reducing or limiting the Contractor or Subcontractors of any responsibility or liability, including the Contractor's obligation to indemnify and defend BAE Systems, Inc., required under this Agreement.

Should insurance coverage procured by the Contractor and Subcontractors in compliance with these requirements have a reduction in coverage below the minimum requirements, Contractor shall immediately inform BAE Systems, Inc. of the reduction in coverage and report on the steps taken by the Contractor and Subcontractors to immediately restore coverage at the required levels. For any required coverage that is subject to a Policy Limit of Liability, Contractor shall notify BAE Systems, Inc. that the insurance is subject to a Policy Limit of Liability. Should any required coverage subject to an Aggregate Limit of Liability be eroded, the Contractor shall notify BAE Systems, Inc. of such impairment and shall immediately take steps, at Contractor's sole expense, to restore both per occurrence and aggregate limits of liability to the minimum required amounts. In the event that the Contractor fails to maintain the coverages or limits as required herein, BAE Systems, Inc. has the right, but not the obligation, to purchase the required insurance. Any premiums or costs incurred by BAE Systems, Inc. to affect such coverage shall be payable by the Contractor or offset by any amounts payable to the Contractor.

The acceptance of Certificate(s) of Insurance by BAE Systems, Inc., or its representative, does not constitute approval or agreement by BAE Systems, Inc. that the insurance requirements have been met or that the insurance coverage provided is in compliance with the requirements of this Agreement.

### 36. BAE SYSTEMS PROPERTY

(Applicable if BAE SYSTEMS property is furnished to the CONTRACTOR under this Contract.)

#### a) BAE SYSTEMS-furnished property.

- (1) BAE SYSTEMS shall deliver to the CONTRACTOR, for use in connection with and under the terms of this Contract, the BAE SYSTEMS-furnished property described in the Schedule of Equipment or specifications together with any related data and information that the CONTRACTOR may request and is reasonably required for the intended use of the property (hereinafter referred to as "BAE SYSTEMS-furnished property").
- (2) The delivery or performance dates for this Contract are based upon the expectation that BAE SYSTEMS-furnished property suitable for use will be delivered to the CONTRACTOR at the times stated in the Schedule or, if not so stated, in sufficient time to enable the CONTRACTOR to meet the Contract's delivery or performance dates.

- (3) If BAE SYSTEMS-furnished property is received by the CONTRACTOR in a condition not suitable for the intended use, the CONTRACTOR shall, upon receipt of it, notify BAE SYSTEMS detailing the facts, and, as directed by BAE SYSTEMS and at BAE SYSTEMS' expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the CONTRACTOR, BAE SYSTEMS shall make an equitable adjustment as provided in paragraph (h) of this clause below. This provision does not apply to property furnished "as is".

- (4) If BAE SYSTEMS-furnished property is not delivered to the CONTRACTOR by the required time, BAE SYSTEMS shall, upon the CONTRACTOR's timely written request, make a determination of the delay, if any, caused the CONTRACTOR and shall make an equitable adjustment in accordance with paragraph (h) of this clause below.

#### b) Changes in BAE SYSTEMS-furnished property.

- (1) BAE SYSTEMS may, by written notice, (i) decrease the BAE SYSTEMS-furnished property provided or to be provided under this Contract, or (ii) substitute other BAE SYSTEMS-furnished property for the property to be provided by BAE SYSTEMS or to be acquired by the CONTRACTOR for BAE SYSTEMS, under this Contract. The CONTRACTOR shall promptly take such action as BAE SYSTEMS may direct regarding the removal, shipment, or disposal of the property covered by such notice.
- (2) Upon the CONTRACTOR's written request, BAE SYSTEMS shall make an equitable adjustment to the Contract in accordance with paragraph (h) of this clause below, if BAE SYSTEMS has agreed in the Schedule to make the property available for performing this Contract and there is any -
  - (i) Decrease or substitution in this property pursuant to subparagraph (b)(1) above; or
  - (ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

#### c) Title in BAE SYSTEMS-furnished property.

- (1) BAE SYSTEMS shall retain title to all BAE SYSTEMS-furnished property
- (2) Title to BAE SYSTEMS property shall not be affected by its incorporation into or attachment to any property not owned by BAE SYSTEMS nor shall BAE SYSTEMS property become a fixture or lose its identity as personal property by being attached to any real property.
- (3) Title to each item of facilities, special test equipment, and special tooling (other than that subject to a special tooling clause) acquired by the CONTRACTOR for BAE SYSTEMS under this Contract shall pass to and vest in BAE SYSTEMS when its use in performing this Contract commences or when BAE SYSTEMS has paid for it, whichever is earlier, whether or not title previously vested in BAE SYSTEMS.
- (4) If this Contract contains a provision directing the CONTRACTOR to purchase material for which BAE SYSTEMS will reimburse the CONTRACTOR as a direct item of cost under this Contract -
  - (i) Title to material purchased from a vendor shall pass to and vest in BAE SYSTEMS upon the vendor's delivery of such material; and
  - (ii) Title to all other material shall pass to and vest in BAE SYSTEMS upon -

- (A) Issuance of the material for use in Contract performance;
    - (B) Commencement of processing of the material or its use in Contract performance; or
    - (C) Reimbursement of the cost of the material by BAE SYSTEMS, whichever occurs first.
  - d) Use of BAE SYSTEMS property. BAE SYSTEMS property shall be used only for performing this Contract, unless otherwise provided in this Contract or approved by BAE SYSTEMS.
  - e) Property administration.
    - (1) The CONTRACTOR shall be responsible and accountable for all BAE SYSTEMS property provided under this Contract.
    - (2) The CONTRACTOR shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of BAE SYSTEMS property
    - (3) If damage occurs to BAE SYSTEMS property, the risk of which has been assumed by BAE SYSTEMS under this Contract, BAE SYSTEMS shall replace the items or the CONTRACTOR shall make such repairs as BAE SYSTEMS directs. However, if the CONTRACTOR cannot effect such repairs within the time required, the CONTRACTOR shall dispose of the property as directed by BAE SYSTEMS. When any property for which BAE SYSTEMS is responsible is replaced or repaired, BAE SYSTEMS shall make an equitable adjustment in accordance with paragraph (h) of this clause below.
    - (4) The CONTRACTOR represents that the Contract price does not include any amount for repairs or replacement for which BAE SYSTEMS is responsible. Repair or replacement of property for which the CONTRACTOR is responsible shall be accomplished by the CONTRACTOR at its own expense
  - f) Access. BAE SYSTEMS and its designees shall have access to the premises in which any BAE SYSTEMS property is located for the purpose of inspecting the BAE SYSTEMS property.
  - g) Risk of loss. Unless otherwise provided in this Contract, the CONTRACTOR assumes the risk of and shall be responsible for, any loss or destruction of, or damage to, BAE SYSTEMS property upon its delivery to the CONTRACTOR or upon passage of title to BAE SYSTEMS under paragraph (c) of this clause above and for any other direct, indirect, special, incidental or consequential damages caused to BAE SYSTEMS on account of such loss, destruction or damage. However, the CONTRACTOR is not responsible for reasonable wear and tear to BAE SYSTEMS property or for BAE SYSTEMS property properly consumed in performing this Contract
  - h) Equitable adjustment. When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, BAE SYSTEMS may initiate an equitable adjustment in favor of itself. The right to an equitable adjustment shall be the CONTRACTOR's exclusive remedy. BAE SYSTEMS shall not be liable for breach of contract or otherwise for -
    - (1) Any delay in delivery of BAE SYSTEMS-furnished property;
    - (2) Delivery of BAE SYSTEMS-furnished property in a condition not suitable for its intended use;
    - (3) A decrease in or substitution of BAE SYSTEMS-furnished property; or
    - (4) Failure to repair or replace BAE SYSTEMS property for which BAE SYSTEMS is responsible.
  - i) Final accounting and disposition of BAE SYSTEMS-furnished property. Upon completing this Contract, or at such earlier dates as may be fixed by BAE SYSTEMS, the CONTRACTOR shall submit, in a form acceptable to BAE SYSTEMS, inventory schedules covering all items of BAE SYSTEMS property (including any resulting scrap) not consumed in performing this Contract or delivered to BAE SYSTEMS. The CONTRACTOR shall prepare for shipment, delivery f.o.b. origin, or dispose of the BAE SYSTEMS property as may be directed or authorized by BAE SYSTEMS. The net proceeds of any such disposal shall be credited to the Contract price or shall be paid to BAE SYSTEMS as BAE SYSTEMS directs.
  - j) Abandonment and restoration of CONTRACTOR's premises. Unless otherwise provided herein, BAE SYSTEMS:
    - (1) May abandon any BAE SYSTEMS property in place, at which time all obligations of BAE SYSTEMS regarding such abandoned property shall cease; and
    - (2) Have no obligation to restore or rehabilitate the CONTRACTOR's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the BAE SYSTEMS-furnished property is withdrawn or is unsuitable for the intended use, or if other BAE SYSTEMS property is substituted, then the equitable adjustment under paragraph (h) of this clause above may properly include restoration or rehabilitation costs.
  - k) Communications. All communications under this clause shall be in writing.
- 37. NOTICE OF LABOR DISPUTES**
- a) CONTRACTOR shall use best efforts to prevent and avoid labor disputes and other labor problems which may affect the Work. Whenever the CONTRACTOR has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this Contract, the CONTRACTOR shall immediately give notice thereof, including all relevant information with respect thereto, to BAE SYSTEMS. CONTRACTOR agrees to take any and all measures as appropriate to resolve any labor situation relative to or caused by CONTRACTOR'S work that may negatively impact the timely execution of the work of the CONTRACTOR or work of any other contractor or SUBCONTRACTOR employed by BAE SYSTEMS' SUBCONTRACTOR'S at the Site. Such measures shall include, but not be limited to, successful negotiations with any and all applicable labor unions. CONTRACTOR shall be responsible for all associated costs and shall not be entitled to any relief in the agreed upon project schedule as a result of any such labor situation
  - b) The CONTRACTOR agrees to insert the substance of this clause, including this paragraph (b), in any subcontract hereunder as to which a labor dispute may delay the timely performance of this Contract; except that each such subcontract shall provide that in the event its timely performance is delayed or threatened by delay by any actual or potential labor dispute, the SUBCONTRACTOR shall immediately notify its next higher tier SUBCONTRACTOR or BAE SYSTEMS as the case may be, of all relevant information concerning such dispute.

**38. INTELLECTUAL PROPERTY**

- a) CONTRACTOR warrants that the Work performed and delivered under this Contract will not infringe or otherwise violate the intellectual property rights of any third party in the United States or any foreign country and is free and clear of all liens, licenses, claims, and encumbrances.
- b) If an injunction is obtained against BAE SYSTEMS' use of the Work or a portion thereof as a result of infringement or misappropriation of the intellectual property of any third party, CONTRACTOR shall either (i) procure for BAE SYSTEMS and Customer the right to continue using the Work or (ii) replace or modify the Work so it becomes non-infringing. The indemnity and hold harmless provision of this Contract shall not be considered an allowable cost under any provisions of this Contract except with regard to allowable insurance costs.
- c) CONTRACTOR grants and agrees that BAE SYSTEMS shall have a nonexclusive, worldwide, sub-licensable, irrevocable, paid-up, royalty-free license and right, to enable BAE SYSTEMS to satisfy its contractual obligations to its Customer, to make, have made, sell, offer for sale, use, execute, reproduce, display, perform, publish, distribute, copy, prepare derivatives or compilations, and authorize others to do any, some or all of the foregoing, with respect to any and all, inventions, discoveries, improvements, technology, designs, works of authorship, mask works, patents, copyrights, technical information, data, databases, Software, business information and other information, conceived, developed, generated or delivered in performance of this Contract. CONTRACTOR shall provide all assistance reasonably required and execute all documents necessary to perfect the rights granted to BAE SYSTEMS herein. To enable CONTRACTOR to comply with the foregoing, CONTRACTOR shall ensure that each of its personnel, workers, representatives, agents and SUBCONTRACTOR'S providing services under this Contract, assign sufficient rights they have in all inventions, works for hire, project results, and the like, to CONTRACTOR.
- d) CONTRACTOR shall promptly deliver to BAE SYSTEMS full disclosures of all data, inventions and works. Such disclosures shall be made or deemed to have been made with complete and exclusive grant to BAE SYSTEMS of all right, title, and interest in and to any such disclosures and the data, inventions and works disclosed herein. Furthermore, BAE SYSTEMS shall be entitled to use any Work product without additional permissions from CONTRACTOR.

**39. REPRODUCTION AND USE OF TECHNICAL DATA**

- a) For use in performance of this Contract, the CONTRACTOR agrees to and does hereby grant to BAE SYSTEMS the right to reproduce, use, and dispose of all or any part of the reports, drawings, blueprints, technical data, computer software, and technical information deliverable or delivered to BAE SYSTEMS pursuant to this Contract, and warrants title to same. The CONTRACTOR agrees to indemnify and hold BAE SYSTEMS and its assigns harmless from any damages, cost, claims and liability arising out of claims that said reproduction, use, or disposition infringes upon third party rights. BAE SYSTEMS shall give the

CONTRACTOR prompt notice in writing of any suit or action alleging such liability.

- b) BAE SYSTEMS shall be under no obligation to restrict disclosure or use, or hold in confidence any data, software, or information which is furnished, delivered, or disclosed under this Contract, or in connection herewith, or as a result hereof, either directly or indirectly, unless and until an agreement to hold same in confidence or restrict disclosure or use is accepted in writing by BAE SYSTEMS' authorized Procurement Representative. In the absence of such written agreement, BAE SYSTEMS may ignore and disregard any restrictive legend on any such data and software, which shall be void and of no effect whatsoever. Acceptance by BAE SYSTEMS of data or software with a restrictive legend not in full compliance with the terms of this Contract shall in no way imply or create a waiver of such terms, unless first authorized by the BAE SYSTEMS Procurement Representative by written amendment of this Contract.
- c) CONTRACTOR agrees not to deliver or furnish any data or software subject to limited use or reproduction unless otherwise agreed as specified above.
- d) If any services, articles, or parts thereof, contracted for hereunder are performed or made to data, standards, plans, drawings or designs furnished by BAE SYSTEMS, the CONTRACTOR shall not reproduce, use, or disclose to others any such information without BAE SYSTEMS's written consent, nor without such written consent, supply or disclose any information regarding any such services or articles, or equipment or any material used therein, nor incorporate in other services, products, or articles any special features of design or manufacture peculiar to the services or articles contracted for under this Contract.

**40. SAFETY AND ACCIDENT PREVENTION**

- a) In performing Work under this Contract on BAE SYSTEMS property, the CONTRACTOR is responsible for the safety and health of contractor or SUBCONTRACTOR employees and shall:
  - (1) Conform to the specific safety requirements contained in this Contract;
  - (2) Comply with the safety rules of BAE SYSTEMS that concern related activities not directly addressed in this Contract;
  - (3) Take all reasonable steps and precautions to prevent accidents and preserve the life and health of BAE SYSTEMS and CONTRACTOR personnel performing or in any way coming in contact with the performance of this Contract; and
  - (4) Take such additional immediate precautions as BAE SYSTEMS may reasonably require for safety and accident prevention purposes.
  - (5) Be responsible for informing all CONTRACTOR and SUBCONTRACTOR employees of any hazards associated with the job site.
- b) The BAE SYSTEMS Procurement Representative may, by written order, direct additional safety and accident standards as may be required in the performance of this Contract and any adjustments resulting from such direction will be in accordance with the Changes clause of this Contract.
- c) The CONTRACTOR shall be responsible for the identification and marking of all existing subsurface underground utilities in or around any areas of the Work, utilizing "Dig Safe" or an equivalent utility identification/marketing service(s). The CONTRACTOR agrees that all live pipe and conduit lines encountered in the performance of the work under this Contract shall be: 1)



protected and supported, 2) cut-off and capped, 3) or re-routed under supervision of persons certified for the appropriate trades, as required. CONTRACTOR shall promptly and properly notify BAE Systems, and other parties involved, and will obtain express written permission and approval from BAE Systems and the other parties involved prior to interfering or beginning work upon such live pipe or conduit lines.

- d) The CONTRACTOR shall immediately notify and promptly report to BAE SYSTEMS, any accident, incident or exposure resulting in fatality, lost-time, occupational injury or occupational disease; or, contamination of property or property loss of \$10,000 or more arising out of Work performed under this Contract; provided, however, the CONTRACTOR will not be required to include in any report an expression of opinion as to the fault or negligence of any employee. In addition, the CONTRACTOR shall comply with any illness, incident and injury experience reporting requirements set forth in the Contract. The CONTRACTOR will investigate all such work-related incidents or accidents to the extent necessary to positively determine the cause, and furnish BAE SYSTEMS with a report, in such form as BAE SYSTEMS may require, of the investigative findings, together with proposed and/or completed corrective actions.
  - e) Any violation of these safety rules and requirements, unless promptly corrected as directed by the BAE SYSTEMS Procurement Representative or designated Field Representative, shall be grounds for termination of this Contract in accordance with the Termination for Default clause of this Contract.
  - f) CONTRACTOR shall be responsible for and hereby agrees to indemnify and save BAE SYSTEMS harmless from any and all:
    - (1) damage to the property of BAE SYSTEMS, the CONTRACTOR or other CONTRACTOR'S or SUBCONTRACTOR'S; or
    - (2) injury to employees of BAE SYSTEMS, the CONTRACTOR, or other CONTRACTOR'S or subcontractors; or
    - (3) for any liability of whatsoever nature arising out of or in connection with the presence of CONTRACTOR or its SUBCONTRACTOR'S pursuant to this Contract.
  - g) The CONTRACTOR shall cause the substance of this clause including this paragraph g) and any applicable Schedule Provisions to be inserted in subcontracts of every tier which: (i) amount to \$1,000,000 or more unless BAE SYSTEMS makes a written determination that this is not required; (ii) require construction, repair, or alteration in excess of \$10,000; or (iii) the CONTRACTOR, regardless of dollar amount, determines that hazardous materials or operations are involved.
  - h) In any emergency affecting the safety of persons or property, CONTRACTOR shall act, at CONTRACTOR'S discretion, to prevent threatened damage, injury or loss.
- 41 **CESSATION OF WORK**
- a) BAE SYSTEMS' Procurement Representative may order the CONTRACTOR, in writing, to suspend, delay, or interrupt all or any part of the Work of this Contract for the period of time that BAE SYSTEMS determines necessary and appropriate

- b) If CONTRACTOR fails to correct Work which is not in accordance with the requirements of the Contract Documents or fails to carry out Work in accordance with the Contract Documents, BAE SYSTEMS, by written order, signed by the Procurement Representative or assigned Field Representative, may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of BAE SYSTEMS to stop the Work shall not give rise to a duty on the part of BAE SYSTEMS to exercise the right for the benefit of CONTRACTOR or any other person or entity.
- c) If the performance of all or any part of the Work is, for an unreasonable period of time, suspended, delayed, or interrupted beyond the period of time stated in Suspension of Work order because of BAE SYSTEMS' failure to act within the time specified, an adjustment shall be made for any increase in the cost of performance of this Contract, excluding profit, necessarily caused by the unreasonable suspension, delay, or interruption, and the Contract shall be modified in writing accordingly. BAE SYSTEMS will not be considered unreasonably suspending, delaying, or interrupting the performance of this Contract if the suspension, delay, or interruption is at the direction of the Federal, State or local government. Additionally, no equitable adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the CONTRACTOR, or for which an equitable adjustment is provided for or excluded under any other term or condition of this Contract.
- d) An equitable adjustment or claim under this clause shall NOT be allowed: (A) for any costs incurred more than twenty (20) days before the CONTRACTOR shall have notified BAE SYSTEMS, in writing, of the act or failure involved (but this requirement shall not apply as to a claim resulting from the suspension order), and (B) unless the claim, in an amount stated, is asserted in writing as soon as possible after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the Contract.
- e) Nothing provided in this clause shall excuse the CONTRACTOR from diligently continuing with performance of Work not suspended, delayed, or interrupted

#### 42 **TERMINATION FOR CONVENIENCE**

- a) BAE SYSTEMS may terminate performance of Work under this Contract in whole or, from time to time, in part if BAE SYSTEMS determines that a termination is in BAE SYSTEMS' interest. BAE SYSTEMS shall terminate by delivering to the CONTRACTOR a "Notice of Termination" specifying the extent of termination and the effective date.
- b) After receipt of a Notice of Termination, and except as directed by BAE SYSTEMS Procurement Representative, the CONTRACTOR shall immediately proceed with the following obligations regardless of any delay, in determining or adjusting any amounts due under this clause:
  - (A) Cease Work as specified in the notice;
  - (B) Place no further Subcontracts or orders for materials, services, or facilities, except as necessary to complete the continued portion of the Contract;

- (C) Terminate all Subcontracts to the extent they relate to the Work terminated;
  - (D) Assign, as directed by the BAE SYSTEMS Procurement Representative, all right, title, and interest of the CONTRACTOR under the Subcontracts terminated, in which case BAE SYSTEMS shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.
  - (E) To the extent required by BAE SYSTEMS, settle all outstanding liabilities and termination settlement proposals arising from the termination of Subcontracts.
  - (F) As directed by BAE SYSTEMS Procurement Representative, transfer title and deliver to BAE SYSTEMS (i) the fabricated or unfabricated parts, Work in process, completed Work, supplies, and other material produced by or acquired for the Work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the Contract had been completed, would be required to be furnished to BAE SYSTEMS.
  - (G) Complete performance of the Work not terminated.
  - (H) Take any action that may be necessary, or that BAE SYSTEMS Procurement Representative may direct, for the protection and preservation of the property related to this Contract that is in the possession of the CONTRACTOR and in which BAE SYSTEMS has or may acquire an interest.
- c) The CONTRACTOR shall submit to BAE SYSTEMS a list, certified as to quantity and quality, of termination inventory.
- d) After termination, the CONTRACTOR shall submit a final termination settlement proposal to BAE SYSTEMS Procurement Representative in the form and with the certification prescribed by BAE SYSTEMS. The CONTRACTOR shall submit the proposal promptly, but no later than ninety (90) days from the effective date of termination, unless extended in writing by BAE SYSTEMS Procurement Representative upon written request of the CONTRACTOR within this 90-day period. However, if BAE SYSTEMS Procurement Representative determines that the facts justify it, a termination settlement proposal may be received and acted on after the 90 days or any extension. If the CONTRACTOR fails to submit the proposal within the time allowed, BAE SYSTEMS' Procurement Representative may determine the basis of settlement on information available, the amount, if any, due the CONTRACTOR because of the termination and shall pay the amount determined.
- e) Subject to paragraph "d" above, the CONTRACTOR and BAE SYSTEMS may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on Work done. However, the agreed amount, whether under this paragraph "e" or paragraph "f" below may not exceed the total Contract sum as reduced by (i) the amount of payments previously made and (ii) the contract price of Work not terminated. The Contract shall be amended, and the CONTRACTOR paid the agreed amount. Paragraph "" below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.
- f) If the CONTRACTOR and BAE SYSTEMS fail to agree on the whole amount to be paid the CONTRACTOR because of the termination of Work, BAE SYSTEMS shall pay the CONTRACTOR the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph "" above:
- (A) For Contract Work performed before the effective date of termination, the total (without duplication of any items) of:
    - (i) the cost of this performed Work;
    - (ii) the cost of settling and paying termination settlement proposals under terminated Subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (i) above; and
    - (iii) a sum, as profit on (i) above, in effect on the date of this Contract, to be fair and reasonable; however, if it appears that the CONTRACTOR would have sustained a loss on the entire contract had it been completed, this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.
  - (B) The reasonable costs of settlement of the Work terminated; and
  - (C) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.
- g) Except to the extent that BAE SYSTEMS expressly assumed the risk of loss, BAE SYSTEMS shall exclude from the amounts payable to the CONTRACTOR under paragraph "f" above, the fair value, as determined by BAE SYSTEMS Procurement Representative, of Work that is destroyed, lost, stolen, or damaged so as to become undeliverable to BAE SYSTEMS.
- h) In arriving at the amount due the CONTRACTOR under this clause, there shall be deducted:
- (A) payments to the CONTRACTOR under the terminated portion of this Contract;
  - (B) any claim which BAE SYSTEMS has against the CONTRACTOR under this Contract; and
  - (C) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the CONTRACTOR or sold under the provisions of this clause and not recovered by or credited to BAE SYSTEMS.
- i) If the termination is partial, the CONTRACTOR may file a proposal, with BAE SYSTEMS' Procurement Representative, for an equitable adjustment of the continued portion of the Contract. Any proposal, by the CONTRACTOR for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by BAE SYSTEMS' Procurement Representative.
- j) Unless otherwise provided in this Contract or by statute, the CONTRACTOR shall maintain all records and documents relating to the terminated portion of this Contract and provide a copy to BAE SYSTEMS on final settlement. This includes all books and other evidence bearing on the CONTRACTOR's costs and expenses under this Contract. The CONTRACTOR shall make these records and documents available to BAE SYSTEMS without charge. Photographs, microphotographs, or other authentic reproductions may be provided instead of original records and documents.
- 43. TERMINATION FOR DEFAULT**
- a) Time is of the essence of this Contract.
  - b) BAE SYSTEMS may, by written notice, without prejudice to any other rights or remedies and without notice to sureties, terminate all or a portion of the Contract if the CONTRACTOR:
    - (A) refuses or fails to supply enough properly skilled workers or proper materials;
    - (B) fails to make payment to SUBCONTRACTOR'S for materials or labor in accordance with the respective agreements between the CONTRACTOR and the SUBCONTRACTOR'S;
    - (C) disregards laws, ordinances, rules, regulations or orders of a public authority having proper jurisdiction;
    - (D) otherwise is guilty of breach of any provision of Contract Documents;
    - (E) refuses or fails to prosecute the Work, or any



separable part thereof, or to perform other requirements under this Contract, with such diligence as will insure Project completion within the time specified in this Contract, or any extension thereof; or

- (F) fails to complete the Work within the time set forth in the Contract Schedule;

In such event BAE SYSTEMS may take over the Work under this contract and prosecute the same to completion, by contract or otherwise and BAE SYSTEMS may take possession of and use any materials, appliances, and plant on the Project Site necessary for completing the Work and the CONTRACTOR and CONTRACTOR'S sureties shall be liable to BAE SYSTEMS for any excess cost occasioned to BAE SYSTEMS thereby, and for liquidated damages for delay, as fixed in the specifications or accompanying documents, until such reasonable time as may be required for the final completion of the Work, or if liquidated damages are not so fixed, actual damages occasioned by such delay.

- c) No exercise by BAE SYSTEMS of BAE SYSTEMS' right to take over and terminate the Work, in whole or in part, under this contract shall operate as a waiver of any other BAE SYSTEMS' rights, or prevent BAE SYSTEMS from exercising such rights, and the right of BAE SYSTEMS to so act is without prejudice to BAE SYSTEMS' rights and without waiver of the liabilities and obligations of CONTRACTOR or any SUBCONTRACTOR'S, as the case may be, nor shall such act impair the right of BAE SYSTEMS to specific performance, injunction, any other equitable remedy or right to money damages under this contract.

- d) If BAE SYSTEMS does NOT terminate the right of the CONTRACTOR to proceed, as provided above, the CONTRACTOR shall continue the Work not terminated, in which event CONTRACTOR'S sureties shall be liable to BAE SYSTEMS, in the amount set forth in the specifications, or accompanying documents, for fixed, agreed, liquidated damages for each calendar day of delay until the Work is completed or accepted, or if liquidated damages are not so fixed, actual damages occasioned by such delay.

- e) The right of the CONTRACTOR to proceed shall not be terminated, as provided in paragraph "b" above, nor the CONTRACTOR charged with liquidated or actual damages, as provided in this paragraph because of any delays in the completion of the Work due to unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to: (A) acts of God or the public enemy, (B) acts of the Government in the Government's sovereign capacity, (C) acts of another contractor in the performance of a contract with BAE SYSTEMS, (D) fires, (E) floods, (F) epidemics, (G) quarantine restrictions, (H) freight embargoes, (I) unusually severe weather, or (J) delays of SUBCONTRACTOR'S or suppliers due to such specified causes herein; provided, that the CONTRACTOR shall within ten (10) days from the beginning of any such delay, notify BAE SYSTEMS Procurement Representative in writing of the specific cause of delay

- f) BAE SYSTEMS shall ascertain the facts and the extent of the delay. If BAE SYSTEMS so determines the facts warrant such action, the time for completing the Work may be extended. The findings of BAE SYSTEMS shall be final and conclusive on the parties, but subject to appeal under the Disputes Clause.
- g) If, after notice of termination of the CONTRACTOR's right to proceed under the provisions of this clause, it is determined for any reason that the CONTRACTOR was not in default under the provisions of this clause, or that the delay was excusable under the provisions of this clause, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to the clause entitled

#### "Termination for Convenience"

#### Limitation on Damages:

46 Except as otherwise provided in this Subcontract, in the event of either Party's failure to perform in accordance with this Subcontract, whether such failure is occasioned by the acts or omissions of either Party, its respective suppliers, or the BAE Parties, either Party may pursue any and all damages and remedies available under this Agreement and/or applicable law. Except as otherwise provided in this Subcontract, damages and remedies that may be recovered by either Party shall be limited as follows: For all claims, regardless of the basis on which the claim is made, the applicable party's liability for damages arising under or related to this Subcontract shall be limited to \$30,000,000. Except as otherwise provided in this Subcontract, neither Party shall be liable for any indirect, special, incidental or consequential damages, including but not limited to lost profits or business interruption losses, whether arising under contract, warranty, express or implied tort, including negligence, or strict liability, arising at any time from any cause whatsoever in connection with this Subcontract or performance hereunder, even if caused by the sole or concurrent or active or passive negligence, strict liability or other legal fault of either of the Parties, their members, directors, officers, employees, agents, representatives, parent companies, subsidiaries, affiliates, joint venture partners, successors and assigns, and each of their respective owners, partners, members, shareholders, directors, managers, officers, employees, agents, representatives and subcontractors at any tier

### **SECTION II: Additional Requirements for Subcontracts/Purchase Orders under a U.S. Government Prime Contract**

#### 1. PRIORITY RATING

- a) If so identified, this Contract is a "rated order" certified for national defense use, emergency preparedness, and energy program use, and the SELLER shall follow all the requirements of the Defense Priorities and Allocation System (DPAS) Regulation (15 C.F.R. Part 700).
- b) Levels of priority: There are two levels of priority established by this regulation, identified by the rating symbols "DO" and "DX". All DX rated orders take preference over DO rated orders and unrated orders. Customer notification requirements.
- (1) A person must accept or reject a rated order and transmit the acceptance or rejection in writing (hard copy), or in electronic format, within fifteen (15) working days after receipt of a DO rated order and within ten (10) working days after receipt of a DX rated order. If the order is rejected, the person must also provide the reasons for the rejection, pursuant to paragraphs (b) and (c) of this section, in writing (hard copy) or electronic format.

#### 2. COMMUNICATION WITH THE GOVERNMENT

- a) BAE SYSTEMS shall be solely responsible for all liaison and coordination between BAE SYSTEMS and the Government as it affects the Prime Contract between BAE SYSTEMS and the Government, as well as on all matters pertaining to this Contract, by and between BAE SYSTEMS and the CONTRACTOR, any associated CONTRACTOR'S, and any designated BAE SYSTEMS SUBCONTRACTOR'S.
- b) Unless otherwise directed in writing by the authorized BAE SYSTEMS Procurement Representative charged with responsibility for the administration of this Contract, all documentation requiring submittal to, or action by, the Government or the Contracting Officer shall be routed to, or through, the BAE SYSTEMS Procurement Representative. Significant informal communications between BAE SYSTEMS and the CONTRACTOR shall be confirmed in writing at the earliest practical date and copies submitted to both Parties.

#### 3. SUPPLEMENTAL TERMS AND CONDITIONS

The following supplemental terms and conditions are hereby incorporated by reference, and shall also apply to this Contract USGOVA-CON "FAR/DFARS/NAVSEA" or Any additional or supplemental terms and conditions that are required to be flowed down from BAE SYSTEMS' prime contract(s) shall be provided as a note on the face of this Contract or as Special or Additional Provisions to the Contract.

#### 4. SURVIVABILITY

Those U. S. Government flowdown provisions that by their nature should survive.

#### 5. APPLICABLE LAWS

- a) Where submission of cost or pricing data is required or requested at any time prior to or during performance of this Contract, if CONTRACTOR or its lower-tier SUBCONTRACTOR'S: (i) submit and/or certify cost or pricing data that are defective; (ii) with notice of applicable cutoff dates and upon BAE SYSTEMS' request to provide cost or pricing data, submit cost or pricing data, whether certified or not certified at the time of submission, as a prospective SUBCONTRACTOR, and any such data are defective as of the applicable cutoff date on BAE SYSTEMS' Certificate of Current Cost or Pricing Data; (iii) claim an exception to a requirement to submit cost or pricing data and such exception is invalid; (iv) furnish data of any description that is inaccurate; and/or (v) if the U.S. Government alleges any of the foregoing, and, as a result (1) BAE SYSTEMS' contract price or fee is reduced; (2) BAE SYSTEMS' costs are determined to be unallowable; (3) any fines, penalties or interest are assessed on BAE SYSTEMS; and/or (4) then BAE SYSTEMS incurs any other costs or damages; BAE SYSTEMS may proceed with an offset reduction of corresponding amounts (in whole or in part) due CONTRACTOR under this Contract or any other contract with CONTRACTOR, and/or may demand payment (in whole or in part) of the corresponding amounts. CONTRACTOR shall promptly pay amounts so demanded.
- b) Unless specifically identified otherwise on a PO or under a master-type agreement, which is part of this Contract, all matters arising from or related to it shall be governed by and construed in accordance with the law of the State from which this Contract is performed, excluding its choice of law rules, except that any provision in this Contract that is (i) incorporated in full text or by reference from the Federal Acquisition Regulations (FAR); and/or (ii) incorporated in full text or by reference from any agency regulation that implements or supplements the FAR; and/or (iii) that is substantially based on any such agency regulation or FAR provision, shall be construed and interpreted according to the U.S. federal common law of government contracts as enunciated and applied by U.S. federal judicial bodies, boards of contract appeals, and quasi-judicial agencies of the U.S. federal Government
- c) If this Contract is for a Commercial Item, CONTRACTOR represents and warrants that the Work provided under this Contract constitutes a "Commercial Item" as defined in FAR 2.101.
- d) By accepting this Contract, CONTRACTOR certifies and represents that it has not made or solicited and will not make or solicit kickbacks in violation of FAR 52.203-7 or the Anti-Kickback Act of 1986 (41 USC 51-58), both of which are incorporated herein by this specific reference, except that paragraph (c)(1) of FAR 52.203-7 shall not apply.

#### 6. RECORDS

CONTRACTOR understands and agrees that BAE Systems may seek reimbursement from the U.S. Government and that, therefore, access to records, and audit by authorized

representatives of the U.S. Government is a material condition of this Contract, and CONTRACTOR shall cooperate with any such request for access or audit of the records by the U.S. Government. CONTRACTOR further agrees to include this clause or an equivalent in all subcontracts or purchase orders issued under this Contract.

#### 7. CAS NONCOMPLIANCE

Award of this Contract does not constitute a determination that the CONTRACTOR's disclosed and applied accounting practices used in pricing this Contract are in compliance with the Cost Accounting Standards (CAS) (if CAS is applicable). BAE SYSTEMS retains its right to adjust the Contract price under the CAS clauses of this Contract if a subsequent final determination of noncompliance is made by the Government.

#### 8. FOREIGN SALES

If the supplies or services provided pursuant to this PO are intended for incorporation in, or use in connection with, military equipment to be used by the armed forces of a foreign government or international organization, the following clause applies:

"The articles or services to be supplied under this PO are intended for incorporation in, or use in connection with, military equipment to be used by the armed forces of a foreign government or an international organization. Part 130 of the International Traffic in Arms Regulations (ITAR), 22 CFR Part 130, requires BAE SYSTEMS to report if CONTRACTOR has made, makes or intends to make any payment, loan or donation of \$1,000 or more either as a political contribution or as a fee or commission in connection with the sale of the articles or services described in this PO, or an end item incorporating such articles. Accordingly, Seller agrees to promptly notify BAE SYSTEMS in writing if it has made, intends to make, or upon the making of, any payment, loan or donation required to be reported under Part 130 of ITAR, and CONTRACTOR agrees to furnish BAE SYSTEMS with information with respect to any such payment to enable BAE SYSTEMS to comply with the reporting requirements of Part 130 of ITAR. CONTRACTOR agrees to include this clause in all subcontracts of \$250,000 or more made hereunder. BAE SYSTEMS will furnish to CONTRACTOR a copy of Part 130 of ITAR on request."

#### 9. GOVERNMENT INSPECTION AT SOURCE

In the event that Government inspection at source is a requirement of this PO, CONTRACTOR shall furnish a copy of this PO to the Government Quality office that normally services CONTRACTOR's plant or to the nearest Government Quality office in CONTRACTOR's locality. If the cognizant Government Quality office cannot be located, CONTRACTOR shall notify BAE SYSTEMS immediately. The following applies to purchase orders for NASA contracts:

All work on this order is subject to inspection and test by the Government at any time and place. The Government quality representative who has been delegated NASA quality assurance functions on this procurement shall be notified immediately upon receipt of this order. The Government representative shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test.

#### 10. OCEAN TRANSPORT OF GOVERNMENT-OWNED SUPPLIES

The CONTRACTOR shall advise BAE SYSTEMS of any proposed transportation by ocean vessels of Government-owned property in the possession of CONTRACTOR or his subcontractors (including pCONTRACTOR property under which title will pass to BAE SYSTEMS or the Government prior to such transportation) in the performance of this PO. Such property shall subsequently be transported only on United States-flag vessels as directed by BAE SYSTEMS.

#### 11. CONTROVERSIES

In the event that Seller asserts any claim against BAE SYSTEMS for additional compensation or damages for breach of contract; and if such claim, if valid, would entitle BAE SYSTEMS to relief, in whole or in part, under BAE SYSTEMS' higher tier contract; Seller shall institute no action or suit against BAE SYSTEMS in any court; until BAE SYSTEMS has exhausted its remedies (unless not otherwise timely pursued) under such higher tier contract before any relevant contracting officer, board of contract appeals, and courts (hereinafter collectively "Adjudicative Bodies"); and the findings of fact and conclusions of law of such Adjudicative Bodies, if BAE SYSTEMS shall have afforded Seller an opportunity to participate in proceedings before such Adjudicative Bodies, shall be binding as collateral estoppel on BAE SYSTEMS and Seller. On all other issues, the findings of fact and conclusions of law of such Adjudicative Bodies shall be binding as collateral estoppel upon BAE SYSTEMS and Seller, if BAE SYSTEMS shall have afforded Seller an opportunity to participate in proceedings before such Adjudicative Bodies.

In the event that a contracting officer under BAE SYSTEMS' higher-tier contract renders any decision whereby any action or failure to act on the part of Seller is held to render BAE SYSTEMS in default of its obligations under such higher-tier contract, such decision shall be binding upon Seller; if BAE SYSTEMS shall afford Seller an opportunity to participate in proceedings before an appropriate Adjudicative Body.

In no event shall decisions of Adjudicative Bodies contemplated by this clause determine issues of fact or of law between BAE SYSTEMS and Seller not cognizable before such Adjudicative Bodies.

**BAE SYSTEMS****BAEDOC USGOVA-CON****FLOW DOWN PROVISIONS FOR SUBCONTRACT/PURCHASE ORDERS FOR ITEMS UNDER A U.S. GOVERNMENT PRIME CONTRACT - CONSTRUCTION**

The Federal Acquisition Regulation (FAR) and Defense Federal Acquisition Regulation Supplement (DFARS) clauses referenced below are incorporated herein by reference, with the same force and effect as if they were given in full text, and are applicable, including any notes following the clause citation, during the performance of this Contract. When a clause uses a word or term that is defined in the FAR or DFARS, the word or term shall have the same meaning as in the definition in FAR 2.101 or DFARS 202.101 in effect on the date of this Contract unless (i) a different definition is expressly set forth in this Contract; or (ii) the part, subpart, or section of the FAR or DFARS where the clause is prescribed provides a different meaning; or (iii) the word or term is defined in FAR Part 31, for use in the cost principles and procedures. If the date or substance of any of the clauses listed below is different than the date or substance of the clause actually incorporated in the Prime Contract referenced by number herein, the date or substance of the clause incorporated by said Prime Contract shall apply instead. If a corresponding FAR and DFARS clause are referenced, the DFARS clause shall take precedence. The Contracts Disputes Act of 1978, as amended, shall have no application to this Contract. Any reference to "Disputes" clause shall mean the "Disputes/Jury Waiver" provision in USGOVFFP or USGOVCOST documents.

**A. GOVERNMENT SUBCONTRACT**

This Contract is entered into by BAE SYSTEMS and SELLER in support of a U.S. Government Contract.

As used in the clauses referenced below and otherwise in this Contract:

1. "Commercial Item" means a commercial item as defined in FAR 2.101 or DFARS 202.101.
2. "Contract" means this Contract.
3. "Contractor" means SELLER, as defined in USGOVFFP or USGOVCOST document, acting as the immediate (first-tier) subcontractor to BAE SYSTEMS.
4. "Prime Contract" means the contract between BAE SYSTEMS and the U.S. Government or between BAE SYSTEMS and its higher-tier contractor in support of a contract with the U.S. Government.
5. "Subcontract" means any contract placed by SELLER or lower-tier subcontractors under this Contract. In all clauses listed herein, the terms "Government," "Contracting Officer" and "Contractor" shall be revised to suitably identify the contracting parties herein and affect the proper intent of the clause or provision except where further clarified or modified below. However, the words "Government" and "Contracting Officer" do not change when 1) a right, act, authorization or obligation can be granted or performed only by the Government or prime contract Contracting Officer or duly authorized representative and/or when 2) title to property is to be transferred directly to the Government.

If any of the following clauses do not apply to this Subcontract/Purchase Order, as defined in the respective FAR or DFARS provision, such clauses are considered to be self-deleting.

**B. AMENDMENTS REQUIRED BY PRIME CONTRACT**

SELLER shall, at the request of BAE SYSTEMS, accept amendments to this Contract to incorporate additional clauses and provisions herein or to change clauses and provisions hereof, as BAE SYSTEMS may reasonably deem necessary in order to comply with the clauses and provisions of the applicable Prime Contract or with the clauses and provisions of amendments to such Prime Contract. If any such

amendment to this Contract causes an increase or decrease in the price of, or the time required for, performance of any part of the Work under this Contract, an equitable adjustment shall be made pursuant to the "Contract Direction/Changes" clause of this Contract.

**C. PRESERVATION OF THE GOVERNMENT'S RIGHTS**

If BAE SYSTEMS furnishes designs, drawings, special tooling, equipment, engineering data or other technical or proprietary information (Furnished Items) to which the U.S. Government owns or has the right to authorize the use of, nothing herein shall be construed to mean that BAE SYSTEMS, acting on its own behalf, may modify or limit any rights the Government may have to authorize the SELLER's use of such Furnished Items in support of other U.S. Government prime contracts.

**D. FAR FLOWDOWN CLAUSES**

In accordance with FAR 52.252-1 and 52.252-2, the following clauses and provisions are incorporated by reference and apply to this Contract as defined by the respective FAR clause or provision:

**1. The following clauses apply to this Contract as defined by the respective FAR clause**

- |           |   |
|-----------|---|
| 52.202-1  | DEFINITIONS (NOV 2013)  |
| 52.203-8  | CANCELAN, RESCISSION, AND RECOVER OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (MAY 2014)                            |
| 52.203-15 | WHISTLEBLOWER PROTECTIONS UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (JUN 2010)                     |
| 52.203-17 | CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS AND REQUIREMENTS TO INFORM EMPLOYEES OF WHISTLERBLOWER RIGHTS (APR 2014) |
| 52.204-2  | SECURITY REQUIREMENTS (AUG 1996)  |
| 52.204-7  | SYSTEM FOR AWARD MANAGEMENT (JUL 2013)  |
| 52.204-9  | PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (JAN 2011)   |
| 52.204-12 | DATA UNIVERSAL NUMBERING SYSTEM NUMBERING MAINTENANCE (DEC 2012)  |
| 52.204-13 | SYSTEM FOR AWARD MANAGEMENT MAINTENANCE (JUL 2013)  |
| 52.204-14 | SERVICE CONTRACT REPORTING REQUIREMENTS (JAN 2014)  |
| 52.204-15 | SERVICE CONTRACT REPORTING REQUIREMENTS FOR INDEFINITE-DELIVERY CONTRACTS (JAN 2014)                              |
| 52.204-16 | COMMERCIAL AND GOVERNMENT ENTITY CODE REPORTING (NOV 2014)  |
| 52.204-18 | COMMERCIAL AND GOVERNMENT ENTITY CODE MAINTENANCE (NOV 2014)  |



52.208-8	REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE DATA (APR 2014)	52.219-14	LIMITATIONS ON SUBCONTRACTING (NOV 2011)
52.209-9	UPDATES OF PUBLICLY AVAILABLE INFORMATION REGARDING RESPONSIBILITY MATTERS (JUL 2013)	52.219-27	NOTICE OF SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS SET ASIDE (NOV 2011)
52.209-10	PROHIBITION ON CONTRACTING WITH INVERTED DOMESTIC CORPORATIONS (DEC 2014)	52.219-29	NOTICE OF SET ASIDE FOR ECONOMICALLY DISADVANTAGED WOMEN-OWNED SMALL BUSINESS CONCERNS (JUL 2013)
52.211-7	ALTERNATIVES TO GOVERNMENT-UNIQUE STANDARDS (NOV 1999)	52.219-30	NOTICE OF SET ASIDE FOR ECONOMICALLY DISADVANTAGED WOMEN-OWNED SMALL BUSINESS PROGRAM (JUL 2013)
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)	52.222-1	NOTICE OF GOVERNMENT LABOR DISPUTES (FEB 1997)
52.211-13	TIME EXTENSIONS (SEPT 2000)	52.222-3	CONVICT LABOR (JUN 2003)
52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENT (APR 2008)	52.222-5	CONSTRUCTION WAGE RATE REQUIREMENTS-SECONDARY SITE OF THE WORK (MAY 2014)
52.211-18	VARIATION IS ESTIMATED QUANTITY (APR 1984)	52.222-6	DAVIS-BACON ACT (JUL 2005)
52.214-3	AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)	52.222-7	WITHOLDING OF FUNDS (FEB 1988)
52.214-4	FALSE STATEMENTS OF BIDS (APR 1984)	52.222-8	PAYROLLS AND BASIC RECORDS (JUN 2010)
52.214-5	SUBMISSION OF BIDS (MAR 1997)	52.222-9	APPRENTICES AND TRAINEES (JUL 2005)
52.214-6	EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)	52.222-10	COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)
52.214-7	LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)	52.222-11	SUBCONTRACTS (LABOR STANDARDS) (JUL 2005)
52.214-10	CONTRACT AWARD-SEALED BIDDING (JUL 1990)	52.222-12	CONTRACT TERMINATION DEBARMENT (FEB 1988)
52.214-12	PREPARATION OF BIDS (APR 1984)	52.222-13	COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)
52.214-18	PREPARATION OF BIDS-CONSTRUCTION (APR 1984)	52.222-14	DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)
52.214-19	CONTRACT AWARD-SEALED BIDDING-CONSTRUCTION (AUG 1996)	52.222-15	CERTIFICATION OF ELIGIBILITY (FEB 1988)
52.214-22	EVALUATION OF BIDS FOR MULTIPLE AWARDS (MAR 1990)	52.222-16	APPROVAL OF WAGE RATES (MAY 2014)
52.214-23	LATE SUBMISSION, MODIFICATION, AND WITHDRAWALS OF TECHNICAL PROPOSALS UNDER TWO-STEP SEALED BIDDING (NOV 1999)	52.222-20	CONTRACTS FOR MATERIALS, SUPPLIES, ARTICLES, AND EQUIPMENT EXCEEDING \$15,000 (MAY 2014)
52.214-24	MULTIPLE TECHNICAL PROPOSAL (APR 1984)	52.222-21	PROHIBITION OF SEGREGATED FACILITIES (APR 2015)
52.214-29	ORDER OF PRECEDENCE-SEALED BIDDING (JAN 1986)	52.222-26	EQUAL OPPORTUNITY (APR 2015) (Only subparagraphs (c) (1)-(11) applies)
52.215-1	INSTRUCTIONS TO OFFERORS COMPETITIVE ACQUISITION (JAN 2004)	52.222-27	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (OVER \$10,000) (APR 2015)
52.215-20	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 2010)	52.222-29	NOTIFICATION OF VISA DENIAL (APR 2015)
52.215-21	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA MODIFICATIONS (OCT 2010)	52.222-33	NOTICE OF REQUIREMENT FOR PROJECT LABOR AGREEMENT (MAY 2010)
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2014) (If this Contract, except contracts to small business concerns, exceeds \$150,000 the Contractor must include this clause in all lower tier subcontracts that offer subcontracting opportunities )	52.222-34	PROJECT LABOR AGREEMENT (MAY 2010)
		52.222-41	SERVICE CONTRACT LABOR STANDARDS (MAY 2014)
		52.222-50	COMBATING TRAFFICKING IN PERSONS (MAR 2015) (A requirement for a compliance plan and certification appropriate to the size and complexity of the contract is required if any portion of the contract (i) is for



	supplies, other than COTS items, acquired outside the United States, or services to be performed outside the United States, and (ii) has an estimated value that exceeds \$500,000)	52.236-2	DIFFERING SITE CONDITIONS (APR 1984)
		52.236-3	SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)
52.222-54	EMPLOYMENT ELIGIBILITY VERIFICATION (AUG 2013)	52.236-5	MATERIAL AND WORKMANSHIP (APR 1984)
52.222-55	ESTABLISHING MINIMUM WAGE FOR CONTRACTORS (DEC 2014)	52.236-6	SUPERINTENDENCE BY CONTRACTOR (APR 1984)
52.223-1	BIOBASED PRODUCT CERTIFICATION (MAY 2012)	52.236-7	PERMITS AND RESPONSIBILITIES (NOV 1991)
52.223-2	AFFIRMATIVE ACTION OF BIO-BASED PRODUCTS UNDER SERVICE AND CONSTRUCTION CONTRACTS (SEP 2013)	52.236-9	PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)
52.223-4	RECOVERED MATERIAL CERTIFICATION (MAY 2008)	52.236-10	OPERATIONS AND STORAGE AREAS (APR 1984)
52.223-5	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (MAY 2011)	52.236-12	CLEANING UP (APR 1984)
52.223-6	DRUG-FREE WORKPLACE (MAY 2001)	52.236-13	ACCIDENT PREVENTION (NOV 1991)
52.223-7	NOTICE OF RADIOACTIVE MATERIALS (JAN 1997) (In the blank insert "30.")	52.236-18	WORK OVERSIGHT IN COST-REIMBURSEMENT CONSTRUCTION CONTRACTS (APR 1984)
52.223-10	WASTE REDUCTION PROGRAM (MAY 2011)	52.236-19	ORGANIZATION AND DIRECTION OF THE WORK (APR 1984)
52.223-12	REFRIDGERATION EQUIPMENT AND AIR CONDITIONERS (MAY 1995)	52.236 21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)
52.223-17	AFFIRMATIVE PROCUREMENT OF EPA-DESIGNATED ITEMS IN SERVICE AND CONSTRUCTION CONTRACTS (MAY 2008)	52.236-28	PREPARATION OF PROPOSALS CONSTRUCTION (OCT 1997)
52.223-18	ENCOURAGING CONTRACTOR POLICIES TO BAN TEXT MESSAGING WHILE DRIVING (AUG 2011)	52.237-1	SITE VISIT (APR 1984)
52.223-19	COMPLIANCE WITH ENVIRONMENTAL MANAGEMENT SYSTEMS (MAY 2011)	52.242-1	NOTICE OF INTENT TO DISALLOW COSTS (APR 1984)
52.225-9	BUY AMERICAN ACT CONSTRUCTION MATERIALS (SEP 2010)	52.242-13	BANKRUPTCY (JUL 1995)
52.225-10	NOTICE OF BUY AMERICAN ACT/ BALANCE OF PAYMENTS PROGRAM REQUIREMENT- CONSTRUCTION MATERIALS (MAY 2014)	52.242-14	SUSPENSION OF WORK (APR 1984)
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2008)	52.243-4	CHANGES (JUN 2007)
52.225 22	NOTICE OF REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS-BUY AMERICAN ACT-CONSTRUCTION MATERIALS (MAY 2014)	52.245-1	GOVERNMENT PROPERTY (APR 2012) (Applicable if Government property is furnished in the performance of this Contract. "Contracting Officer" means "BAE SYSTEMS" except in the definition of Property Administrator and in paragraphs (h)(1)(iii) and where it is unchanged, and in paragraphs (c) and (h)(4) where it includes BAE SYSTEMS. "Government" is unchanged in the phrases "Government property" and "Government furnished property" and where elsewhere used except in paragraph (d)(1) where it means "BAE SYSTEMS" and except in paragraphs (d)(2) and (g) where the term includes BAE SYSTEMS." The following is added as paragraph (n) ""SELLER" shall provide to BAE SYSTEMS immediate notice of any disapproval, withdrawal of approval, or nonacceptance by the Government of SELLER's property control system.".)
52.226-5	RESTRICTIONS ON SUBCONTRACTING OUTSIDE DISASTER OR EMERGENCY AREA (NOV 2007)		
52.227-22	MAJOR SYSTEM-MINIMUM RIGHTS (JUN 1987)	52.245-2	GOVERNMENT PROPERTY INSTALLATION OPERATION SERVICES (APR 2012)
52.229-3	FEDERAL, STATE, AND LOCAL TAXES (FEB 2013)	52.245-9	USE AND CHARGES (APR 2012)
52.229-4	FEDERAL, STATE, AND LOCAL TAXES (STATE AND LOCAL ADJUSTMENTS) (FEB 2013)	52.246-12	INSPECTION OF CONSTRUCTION (AUG 1996)
52.232-5	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (SEP 2002)	52.246-13	INSPECTION-DISMANTLING, DEMOLITION, OR REMOVAL OF IMPROVEMENTS (AUG 1996)
52.232-10	PAYMENTS UNDER FIXED-PRICED ARCHITECT ENGINEER CONTRACTS (APR 2010)	52.246-21	WARRANTY OF CONSTRUCTION (MAR 1994)
52.232-16	PROGRESS PAYMENTS (APR 2012)		

- 52.247-64 PREFERENCE FOR PRIVATELY OWNED U.S.-FLAG COMMERCIAL VESSELS (FEB 2006)
2. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$10,000**
- 52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)
- 52.222-40 NOTIFICATION OF EMPLOYEE RIGHTS UNDER THE NATIONAL LABOR RELATIONS ACT (DEC 2010)
3. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$15,000**
- 52.222-36 EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES (JULY 2014)
4. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$25,000**
- 52.204-10 REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS (JUL 2013)  
Note: BAE SYSTEMS requires that all SELLERS register and annually update the System for Award Management (SAM)
5. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$100,000**
- 52.222-35 EQUAL OPPORTUNITY FOR VETERANS (JUL 2014)
6. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$150,000**
- 52.203-3 GRATUITIES (APR 1984)
- 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (OCT 2010)
- 52.227-4 PATENT INDEMNITY CONSTRUCTION CONTRACTS (DEC 2007)
- 52.227-6 ROYALTY INFORMATION (APR 1984)
- 52.244-5 COMPETITION IN SUBCONTRACTING (DEC 1996)
- 52.246-25 LIMITATION OF LIABILITY-SERVICES (FEB 1997)
7. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$650,000:**
- 52.210-1 MARKET RESEARCH (APR 2011)
- 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (OCT 2014) (The SELLER's subcontracting plan is incorporated herein by reference.)
- 52.219-16 LIQUIDATED DAMAGES SUBCONTRACTING PLAN (JAN 1999) (Delete subparagraphs (d) and (e).)
8. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$5,000,000 and the period of performance exceeds 120 days:**
- 52.203-13 CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT (APR 2010)
9. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the value of this Contract equals or exceeds \$10,000,000:**
- 52.222-24 PREAWARD ON-SITE EQUAL OPPORTUNITY COMPLIANCE EVALUATION (FEB 1999)
10. **The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract is for a Non-Commercial Item:**
- 52.208-8 REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE DATA (APR 2014)
- 52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (APR 2008)
- 52.215-10 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA (AUG 2011) (Rights and obligations under this clause shall survive completion of the Work and final payment under this Contract)
- 52.215-11 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - MODIFICATIONS (AUG 2011) (Rights and obligations under this clause shall survive completion of the work and final payment under this Contract)
- 52.215-15 PENSION ADJUSTMENTS AND ASSET REVERSIONS (OCT 2010)
- 52.215-16 FACILITIES CAPITAL COST OF MONEY (JUNE 2003)
- 52.215-17 WAIVER OF FACILITIES CAPITAL COST OF MONEY (OCT 1997)
- 52.215-18 REVERSION OR ADJUSTMENT OF PLANS FOR POST-RETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (JUL 2005)
- 52.215-19 NOTIFICATION OF OWNERSHIP CHANGES (OCT 1997) (In paragraph (a)(1) and (a)(2) "30 days" is changed to "25 days")
- 52.223-3 HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997)
- 52.224-2 PRIVACY ACT (APR 1984)
- 52.227-1 AUTHORIZATION AND CONSENT (DEC 2007)
- 52.227-9 REFUND OF ROYALTIES (APR 1984)
- 52.227-10 FILING OF PATENT APPLICATIONS-CLASSIFIED SUBJECT MATTER (DEC 2007)
- 52.227-11 PATENT RIGHTS-OWNERSHIP BY THE CONTRACTOR (MAY 2014) (Reports required by this clause shall be filed with the agency identified in this Contract. If no agency is identified, contact the BAE SYSTEMS Procurement Representative identified on the face of this Contract.)
- 52.227-13 PATENT RIGHTS-OWNERSHIP BY THE GOVERNMENT (DEC 2007) (Reports required by this clause shall be filed with the agency identified in this Contract. If no agency is identified, contact the BAE SYSTEMS Procurement Representative identified on the face of this Contract)

- 52.227-14 RIGHTS IN DATA - GENERAL (MAY 2014)
- 52.228-3 WORKERS' COMPENSATION INSURANCE (DEFENSE BASE ACT) (APR 1984) (The SELLER shall insert, in all subcontracts under this Contract to which the Defense Base Act applies, a clause similar to this clause (including this sentence) imposing upon those subcontractors this requirement to comply with the Defense Base Act.)
- 52.228-4 WORKERS' COMPENSATION AND WAR-HAZARD INSURANCE OVERSEAS (APR 1984) The SELLER shall insert, in all subcontracts under this Contract (i) to which the Defense Base Act would apply but for the waiver and (ii) to which the War Hazards Compensation Act would apply unless the Contactor elects to assume directly the liability to subcontractor employees, a clause similar to this clause (including this sentence) imposing upon those subcontractors this requirement to provide workers' compensation insurance coverage and/or war-hazard benefits.)
- 52.228-5 INSURANCE WORK ON A GOVERNMENT INSTALLATION (JAN 1997)
- 52.229-10 STATE OF NEW MEXICO GROSS RECEIPTS AND COMPENSATING TAX (APR 2003)
- 52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION (MAY 2012)
- 52.230-2 COST ACCOUNTING STANDARDS (MAY 2014) (When referenced in this Contract, full CAS Coverage applies. Delete paragraph (b) of the clause )
- 52.230-3 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES (MAY 2014) (When referenced in this Contract, Modified CAS Coverage applies. Delete paragraph (b) of the clause.)
- 52.230-4 DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES FOREIGN CONCERNS (MAY 2014)
- 52.230-6 ADMINISTRATION OF COST ACCOUNTING STANDARDS (JUN 2010)
- 52.233-2 SERVICE OF PROTEST (SEP 2006)
- 52.233-3 PROTEST AFTER AWARD (AUG 1996) (In the event BAE SYSTEMS' Customer has directed BAE SYSTEMS to stop performance of the Work under the Prime Contract under which this Contract is issued pursuant to FAR 33.1, BAE SYSTEMS may, by written order to SELLER, direct Contractor to stop performance of the Work called for by this Contract. "30 days" means "20 days" in paragraph (b)(2). Note I applies, except the first time it appears in paragraph (f); in paragraph (f) add after "33.104(h)(1)" "and recovers those costs from BAE SYSTEMS" )
- 52.233-4 APPLICABLE LOAW FOR BREACH OF CONTRACT CLAIM (OCT 2004)
- 52.237-2 PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT AND VEGETATION (APR 1984)
- 52.247-63 PREFERENCE FOR U.S.-FLAG AIR CARRIERS (JUN 2003) (Applicable if this Contract involves international air transportation.)
- 11. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract equals or exceeds \$100,000 and is for a Non-Commercial Item:**
- 52.222-37 EMPLOYMENT REPORTS ON VETERANS(JUL 2014)
- 52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAY 2010)
- 12. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract equals or exceeds \$150,000 and is for a Non-Commercial Item:**
- 52.203-5 COVENANT AGAINST CONTINGENT FEES (MAY 2014)
- 52.203-7 ANTI-KICKBACK PROCEDURES (MAY 2014)
- 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (MAY 2014)
- 52.203-16 PREVENTING PERSONAL CONFLICTS OF INTEREST (DEC 2011)
- 52.204-5 WOMEN OWNED BUSINESS OTHER THAN SMALL BUSINESS (OCT 2014)
- 52.215-2 AUDIT AND RECORDS-NEGOTIATION (OCT 2010)
- 52.215-14 INTEGRITY OF UNIT PRICES (OCT 2010) (Delete paragraph (b) of the clause.)
- 52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT -OVERTIME COMPENSATION (OCT 2014)
- 52.242-13 BANKRUPTCY (JUL 1995)
- 52.248-2 VALUE ENGINEERING ARCHITECT-ENGINEER (MAR 1990)
- 52.248-3 VALUE ENGINEERING - CONSTRUCTION (OCT 2010)
- 13. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract equals or exceeds \$700,000 and is for a Non-Commercial Item:**
- 52.215-12 SUBCONTRACTOR COST OR PRICING DATA (OCT 2010)
- 52.215-13 SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS (OCT 2010)
- 14. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract equals or exceeds \$5,000,000 and is for a Non-Commercial Item:**
- 52.203-14 DISPLAY OF HOTLINE POSTERS (DEC 2007) (Contact BAE SYSTEMS Procurement Representative if assistance is required obtaining any required posters.)
- 15. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract is Fixed Price for Non-Commercial Items:**
- 52.214-26 AUDIT AND RECORDS- SEALED BIDDING (OCT 2010)
- 52.214-27 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA MODIFICATIONS SEALED BIDDING (AUG 2011)
- 52.214-28 SUBCONTRACTOR COST OR PRICING DATA MODIFICATIONS SEALED BIDDING (OCT 2010)
- 52.216-5 PRICE REDETERMINATION - PROSPECTIVE (OCT 1997) (Applicable if the requirements of FAR 16.205-2 and FAR 16.205-3(a) through (d) have been met and this clause is expressly incorporated in this Contract. In subparagraph (j) change "the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause" to "BAE

- SYSTEMS shall promptly issue a decision, which decision may be appealed by SELLER pursuant to the Disputes/Jury Waiver clause of this Contract.”.)
- 52.216-6 PRICE REDETERMINATION-RETROACTIVE (OCT 1997) (In subparagraph (i) change “the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause” to “BAE SYSTEMS shall promptly issue a decision, which decision may be appealed by SELLER pursuant to the Disputes/Jury Waiver clause of this Contract.”)
- 52.216-9 FIXED FEE-CONSTRUCTION (JAN 2011)
- 52.216-16 INCENTIVE PRICE REVISION-FIRM TARGET (OCT 1997) ALTERNATE I (APR 1984) (In subparagraph (i) change “the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause” to “BAE SYSTEMS shall promptly issue a decision, which decision may be appealed by SELLER pursuant to the Disputes/Jury Waiver clause of this Contract.”.)
- 52.216-17 INCENTIVE PRICE REVISION SUCCESSIVE TARGETS (OCT 1997) (In subparagraph (k) change “the Contracting Officer shall promptly issue a decision in accordance with the Disputes clause” to “BAE SYSTEMS shall promptly issue a decision, which decision may be appealed by SELLER pursuant to the Disputes/Jury Waiver clause of this Contract.”)
- 52.229-6 TAXES FOREIGN FIXED PRICE CONTRACTS (JUNE 2003)
- 52.229-7 TAXES FIXED PRICE CONTRACTS WITH FOREIGN GOVERNMENTS (JAN 1991)
- 52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT ALT I OR ALT III (FIXED-PRICE) (APR 2012) (In paragraph (n) “Government” means “BAE SYSTEMS and the Government” and “Contracting Officer” means “BAE SYSTEMS or the Contracting Officer.” In paragraph (c) “120 days” is changed to “60 days.” In paragraph (d) “15 days” is changed to “30 days,” and “45 days” is changed to “60 days.” In paragraph (e) “1 year” is changed to “6 months.” In paragraph (l) “90 days” is changed to “45 days.” Settlements and payments under this clause may be subject to the approval of the Contracting Officer.)
- 52.249-3 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (DISMANTLING, DEMOLITION, OR REMOVAL OF IMPROVEMENTS) (APR 2012) (In paragraph (n) “Government” means “BAE SYSTEMS and the Government” and “Contracting Officer” means “BAE SYSTEMS or the Contracting Officer.” In paragraph (c) “120 days” is changed to “60 days.” In paragraph (d) “15 days” is changed to “30 days,” and “45 days” is changed to “60 days.” In paragraph (e) “1 year” is changed to “6 months.” In paragraph (l) “90 days” is changed to “45 days.” Settlements and payments under this clause may be subject to the approval of the Contracting Officer.)
- 52.249-10 DEFAULT (FIXED PRICE CONSTRUCTION) (APR 1984) (Timely performance is a material element of this Contract.)
- 16. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract is Cost Type or Time and Material for a Non-Commercial Items:**
- 52.215-22 LIMITATIONS ON PASS THROUGH CHARGES IDENTIFICATION OF SUBCONTRACT EFFORT (OCT 2009)
- 52.215-23 LIMITATIONS ON PASS-THROUGH CHARGES (OCT 2009)
- 52.216-8 FIXED FEE (JUN 2011)
- 52.216-11 COST CONTRACT NO FEE (APR 1984)
- 52.216-12 COST-SHARING CONTRACT NO FEE (APR 1984)
- 52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990) (Insert ZERO in the Blank.)
- 52.229-8 TAXES FOREIGN COST REIMBURSEMENT CONTRACTS (MAR 1990)
- 52.229-9 TAXES COST REIMBURSEMENT CONTRACTS WITH FOREIGN GOVERNMENTS (MAR 1990)
- 52.232-20 LIMITATION OF COST (APR 1984) (Applicable when this Contract becomes fully funded)
- 52.232-22 LIMITATION OF FUNDS (APR 1984) (Applicable if this Contract is incrementally funded. When this Contract becomes fully funded 52.232-20 shall apply in lieu of this clause.
- 52.234-4 EARNED VALUE MANAGEMENT SYSTEM (MAY 2014)
- 52.242-1 NOTICE OF INTENT TO DISALLOW COSTS (APR 1984) (In paragraph (a)(2) the first time “60 days” is cited it shall be changed to “45 days”, the second time “60 days” is cited it shall be changed to “75 days”.
- 52.249-14 EXCUSABLE DELAYS (APR 1984)
- 52.249-6 TERMINATION (COST REIMBURSEMENT) (MAY 2004) (Substitute “60 days” for “120 days” and “60 days” for “120 days” in paragraph (d). Substitute “150 days” for “1 year” in paragraph (f). Delete paragraph (j). Settlements and payments under this clause may be subject to the approval of the Contracting Officer.
- 17. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract is for a Commercial Item:**
- 52.212-1 INSTRUCTIONS TO OFFERORS-COMMERCIAL ITEMS (APR 2014)
- 52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS – COMMERCIAL ITEMS (APR 2015)
- E. CERTIFICATIONS AND REPRESENTATIONS**
- This Subsection contains certifications and representations that are material representations of fact upon which BAE SYSTEMS will rely in making awards to Contractor. By submitting its written offer, or providing oral offers/quotations at the request of BAE SYSTEMS, or accepting any Contract, Contractor certifies to the representations and certifications as set forth below in this Subsection. These certifications and representations shall apply whenever these terms and conditions are incorporated by reference in any Contract, agreement, other contractual document or any quotation, request for quotation (oral or written), request for proposal or solicitation (oral or written), issued by BAE SYSTEMS. Contractor shall immediately notify BAE SYSTEMS of any change of status with regard to these certifications and representations.
- 1. The following additional clauses apply to this Contract as defined by the respective FAR clause:**
- 52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)
- 52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (SEP 2007)
- 52.204-19 INCORPORATION BY REFERENCE OF REPRESENTATION AND CERTIFICATIONS (DEC 2014)



52.209-2 PROHIBITION ON CONTRACTING WITH INVERTED DOMESTIC CORPORATIONS-REPRESENTATION (DEC 2014)

when submitted or has become erroneous by reason of changed circumstances.

52.222-56 CERTIFICATION REGARDING TRAFFICING IN PERSONS COMPLIANCE PLAN (MAR 2015)  
(A requirement for a compliance plan and certification appropriate to the size and complexity of the contract is required if any portion of the contract (i) is for supplies, other than COTS items, acquired outside the United States, or services to be performed outside the United States, and (ii) has an estimated value that exceeds \$500,000)

c) FAR 52.222-22 Previous Contracts and Compliance Reports (FEB 1999).

Contractor represents that if Contractor has participated in a previous contract or subcontract subject to the Equal Opportunity clause (FAR 52.222-26) (i) Contractor has filed all required compliance reports and: (ii) that representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

52.225-20 PROHIBITION ON CONDUCTING RESTRICTED BUSINESS OPERATIONS IN SUDAN (AUG 2009)

d) FAR 52.222-25 Affirmative Action Compliance (APR 1984).

52.225-25 PROHIBITION ON CONTRACTING WITH ENTITIES ENGAGING IN SATIONED ACTIVITIES RELATING TO IRAN-REPRESENTATION AND CERTIFICATION (DEC 2012)

Contractor represents (1) that Contractor has developed and has on file at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 C.F.R. 60-1 and 60-2), or (2) that in the event such a program does not presently exist, Contractor will develop and place in operation such a written Affirmative Action Compliance Program within 120 days from the award of this Contract.

**2. The following additional referenced clauses apply to this Contract as written:**

a) FAR 52.209-5 -- Certification Regarding Responsibility Matters (APR 2010) (1) The SELLER certifies, to the best of its knowledge and belief, that --

(i) The SELLER and/or any of its Principals --

(A) Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) contract or subcontract; violation of Federal or State antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating Federal criminal tax laws, or receiving stolen property

(C) Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision; and

(D) Have not, within a three-year period preceding this offer, been notified of any delinquent Federal taxes in an amount that exceeds \$3,000 for which the liability remains unsatisfied.

(ii) The SELLER has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

b) FAR 52.209-6 Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (AUG 2013)

i Contractor certifies that, to the best of its knowledge and belief, that Contractor and/or any of its Principals, (as defined in FAR 52.209-6) are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency

ii Contractor shall provide immediate written notice to BAE SYSTEMS if, any time prior to award of any Contract, it learns that its certification was erroneous

**3. The following additional representations apply:**

**CONFLICT OF INTEREST**

a) Seller acknowledges that FAR Subpart 9.5, Organizational and Consultant Conflicts of Interest, governs Work performed under this Agreement.

b) Seller represents and warrants that there are no actual, potential, or perceived conflicts of interest associated with its Work for BAE Systems; that it will comply with all BAE Systems policies and procedures related to Work with current United States Government employees; and that it is not prohibited by law or regulation from receiving compensation from BAE Systems for delivering and/or performing Work under this Agreement. Should any actual, potential, or perceived conflict of interest arise in connection with this Agreement, Seller shall notify BAE Systems immediately, but in no event later than one (1) calendar day after becoming aware of such conflict of interest.

c) BAE Systems, at its sole discretion and on a case-by case basis, will determine whether a conflict of interest exists or is likely to arise. If BAE Systems determines that an actual, potential, or perceived conflict of interest exists, it may impose on Seller appropriate constraints to neutralize or mitigate that conflict of interest, up to and including, termination of this Agreement.

d) The term Seller as used in this Article shall mean: (1) the organization entering into this Agreement with BAE Systems; (2) all business organizations with which Seller may merge, join, or affiliate, now or in the future and in any manner whatsoever, or which hold or may obtain, by purchase, merger, or otherwise, direct or indirect control of Seller; (3) Seller's parent organization, if any, and any of its present or future subsidiaries, associates, affiliates, or holding companies, and; (4) any organization or enterprise over which Seller has direct or indirect control, now or in the future.

e) In connection with a particular constraint, Seller may submit a proposal to BAE Systems for the purpose of indicating potential measures to avoid or mitigate a conflict. BAE Systems, at its sole discretion, may accept or reject Seller's proposal

**F. DFARS FLOWDOWN CLAUSES**

Note: If the respective PO or Subcontract identifies this as non Department of Defense, then the following clauses do not apply:



**1. The following additional clauses apply to this Contract as defined by the respective DFARS clause**

- |   |  |
|---|--|
| <p>252.204-7000 DISCLOSURE OF INFORMATION (DEC 1991)</p> <p>252.204-7008 REQUIREMENTS FOR CONTRACTS INVOLVING EXPORT-CONTROLLED ITEMS (APR 2010)</p> <p>252.204-7010 REQUIREMENT FOR CONTRACTOR TO NOTIFY DOD IF THE CONTRACTOR'S ACTIVITIES ARE SUBJECT TO REPORTING UNDER THE U.S.-INTERNATIONAL ATOMIC ENERGY AGENCY ADDITIONAL PROTOCOL (JAN 2009)</p> <p>252.204-7012 SAFEGUARDING OF UNCLASSIFIED CONTROLLED TECHNICAL INFORMATION (DEC 2014)</p> <p>252.204-7015 DISCLOSURE OF INFORMATION TO LITIGATION SUPPORT CONTRACTORS (FEB 2014)</p> <p>252.208-7000 INTENT TO FURNISH PRECIOUS METALS AS GOVERNMENT-FURNISHED MATERIAL (DEC 1991)</p> <p>252.209-7999 REPRESENTATION BY CORPORATIONS REGARDING AN UNPAID DELINQUENT TAX LIABILITY OR A FELONY CONVICTION UNDER A FEDERAL LAW</p> <p>252.211-7003 ITEM IDENTIFICATION AND VALUATION (DEC 2013)</p> <p>252.211-7007 REPORTING OF GOVERNMENT-FURNISHED PROPERTY (AUG 2012)</p> <p>252.219-7003 SMALL BUSINESS SUBCONTRACTING PLAN (DoD Contracts) (OCT 2014)</p> <p>252.223-7002 SAFETY PRECAUTIONS FOR AMMUNITION AND EXPLOSIVES (MAY 1994)</p> <p>252.223-7003 CHANGE IN PLACE OF PERFORMANCE AMMUNITION AND EXPLOSIVES (DEC 1991)</p> <p>252.223 7006 PROHIBITION ON STORAGE AND DISPOSAL OF TOXIC AND HAZARDOUS MATERIALS (SEP 2014)</p> <p>252.223-7007 SAFEGUARDING SENSITIVE CONVENTIONAL ARMS, AMMUNITION, AND EXPLOSIVES (SEP 1999)</p> <p>252.223-7008 PROHIBITION OF HEXAVALENT CHROMIUM (JUN 2013)</p> <p>252.225-7001 BUY AMERICA ACT AND BALANCE OF PAYMENTS PROGRAM CERTIFICATE (NOV 2014)</p> <p>252.225-7007 PROHIBITION ON ACQUISITION OF UNITED STATES MUNITIONS LIST ITEMS FROM COMMUNIST CHINESE MILITARY COMPANIES (SEP 2006)</p> <p>252.225-7008 RESTRICTION ON ACQUISITION OF SPECIALTY METALS (JUL 2009)</p> <p>252.225-7009 RESTRICTION ON ACQUISITION OF CERTAIN ARTICLES CONTAINING SPECIALTY METALS (OCT 2014) (paragraphs (c)(6), (d), and (e)(1) are deleted)</p> <p>252.225-7010 COMMERICAL DERIVATIVE MILITARY ARTICLE SPECIALTY METALS COMPLIANCE CERTIFICATE (JUL 2009)</p> <p>252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (JUN 2012)</p> <p>252.225-7013 DUTY-FREE ENTRY (NOV 2014)</p> <p>252.225-7015 RESTRICTION ON ACQUISITION OF HAND OR MEASURING TOOLS (JUN 2005)</p> | <p>252.225-7016 RESTRICTION ON ACQUISITION OF BALL AND ROLLER BEARINGS (JUN 2011)</p> <p>252.225-7017 PHOTOVOLTAIC DEVICES (JUN 2012)</p> <p>252.225-7018 PHOTOVOLTAIC DEVICES CERTIFICATE (MAY 2012)</p> <p>252.225-7021 TRADE AGREEMENTS-BASIC (NOV 2014)</p> <p>252.225-7025 RESTRICTION ON ACQUISITION OF FORGINGS (DEC 2009)</p> <p>252.225-7030 RESTRICTION ON ACQUISITION OF CARBON, ALLOY, AND ARMOR STEEL PLATE (DEC 2006)</p> <p>252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 2005)</p> <p>252.225-7032 WAIVER OF UNITED KINGDOM LEVIES EVALUATION OF OFFERS (APR 2003)</p> <p>252.225-7033 WAIVER OF UNITED KINGDOM LEVIES (APR 2003)</p> <p>252.225-7039 DEFENSE CONTRACTORS PERFORMING PRIVATE SECURITY FUNCTIONS OUTSIDE OF THE UNITED STATES (JAN 2015)</p> <p>252.225-7040 CONTRACTOR PERSONNEL AUTHORIZED TO ACCOMPANY U.S. ARMED FORCES DEPLOYED OUTSIDE THE UNITED STATES (JUN 2011).</p> <p>252.225-7043 ANTI-TERRORISM/FORCE PROTECTION FOR DEFENSE CONTRACTORS OUTSIDE THE UNITED STATES (MAR 2006)</p> <p>252.226-7001 UTILIZATION OF INDIAN ORGANIZATIONS, INDIAN-OWNED ECONOMIC ENTERPRISES, AND NATIVE HAWAIIAN SMALL BUSINESS CONCERNS- DOD CONTRACTS (SEP 2004) (In e (1), "Contractor" shall mean BAE SYSTEMS )</p> <p>252.229-7011 REPORTING OF FOREIGN TAXES U.S. ASSISTANCE PROGRAMS (SEP 2005)</p> <p>252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)</p> <p>252.235-7003 FREQUENCY AUTHORIZATION (MAR 2014)</p> <p>252.236-7000 MODIFICATION PROPOSALS-PRICE BREAKDOWN (DEC 1991)</p> <p>252.236-7001 CONTRACT DRAWINGS AND SPECIFICATIONS (AUG 2000)</p> <p>252.236-7002 OBSTRUCTION OF NAVIGABLE WATERWAYS (DEC 1991)</p> <p>252.236-7003 PAYMENT FOR MOBILIZATION AND PREPATORY WORK (JAN 1997)</p> <p>252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)</p> <p>252.236-7005 AIRFIELD SAFETY PRECAUTIONS (DEC 1991)</p> <p>252.236-7006 COST LIMITATION (JAN 1997)</p> <p>252.236-7007 ADDITIVE OR DEDUCTIVE ITEMS (DEC 1991)</p> <p>252.236-7008 CONTRACT PRICES-BIDDING SCHEDULES (DEC 1991)</p> <p>252.236-7011 OVERSEAS ARCHITECT-ENGINEER SERVICES- RESTRICTION TO UNITED STATES FIRMS (JAN 1997)</p> |
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252.237-7019 TRAINING FOR CONTRACTOR PERSONNEL INTERACTING WITH DETAINEES (JUN 2013)

252.239-7016 TELECOMMUNICATIONS SECURITY EQUIPMENT, DEVICES, TECHNIQUES, AND SERVICES (DEC 1991)

252.239-7017 NOTICE OF SUPPLY CHAIN RISK (NOV 2013)

252.239-7018 SUPPLY CHAIN RISK (NOV 2013)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DoD CONTRACTS) (JUN 2012)

252.245-7004 REPORTING, REUTILIZATION, AND DISPOSAL (MAY 2013)

252.246-7001 WARRANTY OF DATA-BASIC (MAR 2014) ALTERNATE II (MAR 2014)

252.246-7003 NOTIFICATION OF POTENTIAL SAFETY ISSUES (JAN 2007) (SUPPLIER shall provide notifications to BAE SYSTEMS and the ACO and PCO for the Prime Contract )

252.246-7007 CONTRACTOR COUNTERFEIT ELECTRONIC PART DETECTION AND AVOIDANCE SYSTEM (Applicable for CAS-covered suppliers) (May 2014)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

**2. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the value of this Contract equals or exceeds \$150,000**

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENTS (DEC 2012)

252.244-7001 CONTRACTOR PURCHASING SYSTEM ADMINISTRATION (MAY 2014)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA-BASIC (APR 2014) (Applicable in lieu of FAR 52.247-64 in all Contracts for ocean transportation of supplies. In the first sentence of paragraph (g), insert a period after "Contractor" and delete the balance of the sentence Paragraph (f) and (g) shall not apply if this Contract is at or below \$150,000.)

252.249-7002 NOTIFICATION OF ANTICIPATED CONTRACT TERMINATION OR REDUCTION (OCT 2010)

**3. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the value of this Contract equals or exceeds \$1,000,000**

252.236-7009 OPTION FOR SUPERVISION AND INSPECTION SERVICES (DEC 1991)

252.236-7010 OVERSEAS MILITARY CONSTRUCTION-PREFERENCE FOR UNITED STATES FIRMS (JAN 1997)

**4. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the value of this Contract equals or exceeds \$1,500,000**

252.211-7000 ACQUISITION STREAMLINING (OCT 2010)

**5. The following additional clauses apply to this Contract as defined by the respective FAR clause if the Contract equals or exceeds \$5,000,000 and is for a Non-Commercial Item:**

252.203-7004 DISPLAY OF FRAUD HOTLINE POSTER(S) (JAN 2015)

**6. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the Contract is for a Non-Commercial Item:**

252.203-7002 REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (SEP 2013)

252.215-7000 PRICING ADJUSTMENTS (DEC 1991)

252.215-7002 COST ESTIMATING SYSTEM REQUIREMENTS (FEB 2012)

252.222-7000 RESTRICTIONS ON EMPLOYMENT OF PERSONNEL (MAR 2000)

252.227-7013 RIGHTS IN TECHNICAL DATA - NON-COMMERCIAL ITEMS (FEB 2012) (Applicable in lieu of FAR 52.227-14)

252.227-7014 RIGHTS IN NON-COMMERCIAL COMPUTER SOFTWARE AND NON-COMMERCIAL COMPUTER SOFTWARE DOCUMENTATION (FEB 2012)

252.227-7016 RIGHTS IN BID OR PROPOSAL INFORMATION (JAN 2011)

252.227-7018 RIGHTS IN NONCOMMERCIAL TECHNICAL DATA AND COMPUTER SOFTWARE-SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM (MAR 2011)

252.227-7019 VALIDATION OF ASSERTED RESTRICTIONS - COMPUTER SOFTWARE (SEP 2011)

252.227-7025 LIMITATIONS ON THE USE OR DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION MARKED WITH RESTRICTIVE LEGENDS (MAR 2011)

252.227-7026 DEFERRED DELIVERY OF TECHNICAL DATA OR COMPUTER SOFTWARE (APR 1988)

252.227-7027 DEFERRED ORDERING OF TECHNICAL DATA OR COMPUTER SOFTWARE (APR 1988)

252.227-7028 TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995) (In this clause, the term "contract" and "subcontract" shall not change in meaning.)

252.227-7030 TECHNICAL DATA - WITHHOLDING OF PAYMENT (MAR 2000)

252.227-7037 VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA (JUN 2012)

252.227-7038 PATENT RIGHTS - OWNERSHIP BY THE CONTRACTOR (LARGE BUSINESS) (JUN 2012)

252.228-7001 GROUND AND FLIGHT RISK (JUN 2010)

252.228-7005 ACCIDENT REPORTING AND INVESTIGATION INVOLVING AIRCRAFT, MISSILES, AND SPACE LAUNCH VEHICLES (DEC 1991)

252.242-7005 CONTRACTOR BUSINESS SYSTEMS (FEB 2012)

**7. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the Contract equals or exceeds \$150,000 and is for a Non-Commercial Item:**

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE CONTRACT-RELATED FELONIES (DEC 2008) (In this clause, the terms "contract," "contractor,"

and "subcontract" shall not change in meaning in paragraphs (a) thru (d).)

- 8. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the Contract equals or exceeds \$1,000,000 and is for a Non-Commercial Item:**

252.222-7006 RESTRICTIONS ON THE USE OF MANDATORY ARBITRATION AGREEMENTS (DEC 2010)

- 9. The following additional clauses apply to this as defined by the respective DFARS clause if the Contract is for a Commercial Item:**

252.212-7001 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS APPLICABLE TO DEFENSE ACQUISITIONS OF COMMERCIAL ITEMS (JUN 2012) (Paragraph (c) is applicable to subcontractors at all tiers.)

252.227-7015 TECHNICAL DATA - COMMERCIAL ITEMS (FEB 2014)

- 10. The following additional clauses apply to this Contract as defined by the respective DFARS clause if the Contract is Cost Type:**

252.234-7002 EARNED VALUE MANAGEMENT SYSTEM (MAY 2011)

252.242-7004 MATERIAL MANAGEMENT AND ACCOUNTING SYSTEM (MAY 2011)

BAE SYSTEMS  
BAEDOC S1 Modified

**BAE SYSTEMS**

## SUPPLEMENTAL TERMS AND CONDITIONS - SERVICES SUBCONTRACT/PURCHASE ORDERS

### APPLICABILITY

When a deliverable item under this Contract includes the provision of Services, the following supplemental terms and conditions shall apply as specified herein. In the event of an inconsistency between these supplemental terms and conditions and another term or condition of this Contract, the "Precedence" Clause of this Contract shall apply and these supplemental terms and conditions shall have the same level of precedence as any other BAEDOC incorporated in the Contract; provided however that to the extent a provision of these supplemental terms and conditions cannot be reconciled with a provision in a "BAEDOC" applicable to this Contract, the provisions of these supplemental terms and conditions shall take precedence over the provision contained in such other BAEDOC.

The following supplemental terms and conditions apply to this Contract:

### **101. ASSIGNMENT OF NON-U.S. PERSONNEL**

- (a) In order to assist BAE SYSTEMS' compliance with U.S. security and export control requirements, SELLER shall not assign any persons who are not United States citizens or aliens granted permanent residency in the United States to work on this Contract without first obtaining BAE SYSTEMS written approval, which approval shall not be unreasonably withheld.
- (b) SELLER shall be responsible for ensuring that all personnel it assigns to this Contract have all required work permits, appropriate licenses, and security clearances necessary to perform the Work. SELLER shall produce such records at any reasonable time upon BAE SYSTEMS request.
- (c) APPLICABLE TO WORK PERFORMED AT BAE SYSTEMS Ship Repair, Inc. shipyards only: SELLER is hereby placed on notice that, at any given time, BAE SYSTEMS may have a United States Navy vessel in its shipyard and, in accordance with BAE SYSTEMS' prime contracts, only U.S. citizens are eligible for access to U.S. Navy vessels, work sites and adjacent areas, and shops where work on the naval vessel's equipment is being performed, unless prior approval is obtained for non-U.S. citizens. SELLER warrants that, unless prior approval is obtained for non-U.S. citizens, only U.S. citizens shall have access to BAE SYSTEMS' shipyard.

### **102. CONTRACT COORDINATION**

- (a) BAE SYSTEMS shall appoint a Technical Representative(s) who shall be responsible for maintaining liaison with SELLER's Lead Supervisor(s).
- (b) SELLER shall appoint a Lead Supervisor(s) who shall be responsible for supervising and directing the work of SELLER's employees and maintaining liaison with BAE SYSTEMS' Technical Representative(s).
- (c) BAE SYSTEMS and SELLER shall inform each other, in writing, of names of the Technical Representative(s) and Lead Supervisor(s) appointed.
- (d) All notices to be furnished by SELLER shall be sent to the BAE SYSTEMS Procurement Representative with a copy to the BAE SYSTEMS Technical Representative.
- (e) The BAE SYSTEMS Technical Representative has no authority to make changes in, to amend, or to modify this Contract. Such changes, amendments or modifications can only be made by the

BAE SYSTEMS Procurement Representative and must be in writing.

### **103. DEFINITIONS**

The following terms shall have the meaning set forth below:

"Services" shall mean the time and effort of SELLER in performing identifiable labor tasks which are themselves a deliverable under this Contract. Services covers activities performed both by professional and non professional personnel of SELLER. Without limiting the foregoing, examples of Services include but are not limited to: engineering design; test functions; training; information technology support; equipment maintenance or repair; temporary labor, and contract labor suppliers; facility improvement, maintenance or repair; security guards; travel administration; and food preparation and cafeteria operations.

Unless expressly otherwise stated, all defined terms used in this Supplement shall have the same meaning set forth in the applicable BAEDOC(s).

### **104. INDEMNITY BY SELLER**

In addition to, and without limiting, the indemnification provisions contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

(FOR SUBCONTRACTS UNDER BAE SYSTEMS Ship Repair Inc. and its subsidiaries, the following is superseded by the Indemnity Agreement executed by SELLER in connection with becoming an approved SUBCONTRACTOR of BAE SYSTEMS SHIP REPAIR INC and its subsidiaries.)

- (a) BOTH PARTIES SHALL INDEMNIFY, HOLD HARMLESS AND, AT THE ELECTION, OF THE OTHER PARTY DEFEND THE OTHER PARTY, ITS DIRECTORS, OFFICERS, EMPLOYEES, AGENTS, AND BENEFITS PLANS FROM AND AGAINST ALL LOSSES, COSTS, CLAIMS, PENALTIES, CAUSES OF ACTION, DAMAGES, LIABILITIES, FEES, AND EXPENSES, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES, ALL EXPENSES OF LITIGATION AND/OR SETTLEMENT, AND COURT COSTS (HEREINAFTER COLLECTIVELY REFERRED TO AS "CLAIMS"), ARISING FROM OR RELATED TO:

ANY INJURY, INCLUDING BUT NOT LIMITED TO DEATH, TO ANY PERSON(S), OR DAMAGE TO PROPERTY, ARISING FROM OR RELATED TO OR CAUSED OR CLAIMED TO HAVE BEEN CAUSED BY THAT PARTY'S OWN ACTS OR OMISSIONS OR THAT OF, ITS OWN DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS, OR ANY OTHER PERSON OR ENTITY DIRECTLY OR INDIRECTLY EMPLOYED BY THAT PARTY, WITH RESPECT TO OR IN CONNECTION WITH SERVICES UNDER THIS CONTRACT.

ANY CLAIMS, MADE BY CONTRACTOR'S DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS (EXCEPT CLAIMS FOR PERSONAL INJURY OR DEATH ARISING FROM GROSS NEGLIGENCE OR INTENTIONAL TORTS ON THE PART OF BAE SYSTEMS) AGAINST BAE SYSTEMS OR ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS IN EITHER THEIR OFFICIAL OR INDIVIDUAL CAPACITIES.

ALLEGED IMPROPER CONDUCT OF ANY NATURE OR TYPE, INCLUDING, BUT NOT LIMITED TO, PHYSICAL, MENTAL OR SEXUAL ABUSE OR HARASSMENT, INVASION OF BODILY INTEGRITY, VIOLATION OF CIVIL RIGHTS, AND/OR



DISCRIMINATION, BY OR ATTRIBUTABLE TO ANY OF CONTRACTOR'S DIRECTORS, OFFICERS, EMPLOYEES, AGENTS, SUPPLIERS OR SUBCONTRACTOR'S.

CONTRACTOR'S FAILURE TO PAY ANY OF CONTRACTOR'S EMPLOYEES, AGENTS, SUPPLIERS, OR SUBCONTRACTOR'S, FOR SERVICES RENDERED OR MATERIALS SUPPLIED UNDER THIS CONTRACT.

- (b) SELLER shall notify BAE SYSTEMS as soon thereafter as is practicable, of any Claims arising from or related to subparagraphs 104 (a)(1)-(4). SELLER shall not settle, adjust, or compromise any such claim or any action or proceeding arising therefrom without consultation with BAE SYSTEMS. BAE SYSTEMS further agrees to cooperate with any investigation of such Claims and to provide SELLER any information reasonably available to BAE SYSTEMS (not of a classified, confidential or privileged nature), and reasonably necessary for the investigation or defense of such Claims.

#### 105. INDEPENDENT CONTRACTOR RELATIONSHIP

In addition to, and without limiting, the "INDEPENDENT CONTRACTOR RELATIONSHIP" Clause contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

- (a) SELLER shall inform BAE SYSTEMS if a former employee of BAE SYSTEMS or its parent, subsidiary or affiliates will be assigned Work under this Contract, and any such assignment shall be subject to BAE SYSTEMS approval
- (b) SELLER shall provide BAE SYSTEMS with any information about SELLER's personnel that BAE SYSTEMS is required by law to obtain, including, but not limited to, information on "leased employees" and "management services organization" as these terms are used in Sections 414(m), (n) and (o) of the Internal Revenue Code.

#### 106. INFORMATION OF BAE SYSTEMS

This paragraph 106 shall apply in lieu of the "INFORMATION OF BAE SYSTEMS" Clause contained in the BAEDOC(s) incorporated into this Contract.

- (a) SELLER shall not use, display, reproduce or disclose any information, knowledge, or data of BAE SYSTEMS, except as provided under paragraph 106(c) below, which SELLER may receive from BAE SYSTEMS or come in contact with, including but not limited to, proprietary information of BAE SYSTEMS or of others when in possession of BAE SYSTEMS (hereinafter, collectively, BAE SYSTEMS INFORMATION). BAE SYSTEMS INFORMATION includes, but is not limited to, business plans, marketing information, personnel information, information about suppliers, cost estimates, forecasts, bid and proposal data, financial data, metrics, technical information, formulae, algorithms, software, hardware, firmware, compositions, products, processes, methods, procedures, inventions, trade secrets, systems, drawings or designs.
- (b) Prior to commencement of assignment, SELLER shall have a written agreement with each of its employees performing Work hereunder sufficient to enable SELLER to comply with this paragraph 106.
- (c) BAE SYSTEMS INFORMATION provided to the SELLER remains the property of BAE SYSTEMS (or third parties as applicable). SELLER shall not use any BAE SYSTEMS INFORMATION for any purpose except to perform this Contract and shall not disclose any BAE SYSTEMS INFORMATION to

third parties without the prior written consent of BAE SYSTEMS. Within thirty (30) days of the expiration or termination of this Contract or upon the request of BAE SYSTEMS, SELLER shall return or certify the destruction of all BAE SYSTEMS INFORMATION and any reproductions, and SELLER shall promptly surrender all information or proprietary data developed by SELLER in performance of this Contract, unless its retention is authorized in writing by BAE SYSTEMS.

- (d) SELLER will notify BAE SYSTEMS within two (2) business days upon discovery of (i) any lost or unauthorized altered Business or Personnel Confidential Information collected, held or processed by SELLER on BAE SYSTEMS's behalf, or (ii) any confirmed breaches of its information security systems. SELLER will maintain records of any known or suspected security breaches in accordance with commercially accepted industry practices and will make such records pertaining specifically to BAE SYSTEMS reasonably available to BAE SYSTEMS and its affected customers upon request. Except as required by applicable law, SELLER agrees that it will not inform any third party of any such security breach affecting BAE SYSTEMS data without BAE SYSTEMS's prior written consent. If such disclosure is required by law or regulation, it shall be disclosed only to the extent required by law or regulation and, if so permitted, after a five (5) business day prior written notification to BAE SYSTEMS of the requirement for such disclosure. SELLER will bear the cost of reproduction or any other remedial steps necessary or advisable to address the security breach.
- (e) All SELLER Services will be hosted and provided in the United States of America. In no event shall SELLER allow any person who is not a United States citizen or a lawful permanent resident to work on or have access to, any BAE SYSTEMS data, information or material
- (f) The provisions set forth above shall take precedence over any conflicting obligations that may be contained in a Proprietary Information Agreement between BAE SYSTEMS and SELLER.

#### 107. INSURANCE/ENTRY ON BAE SYSTEMS OR CUSTOMER PROPERTY

In addition to, and without limiting, the "INSURANCE/ENTRY ON BAE SYSTEMS OR CUSTOMER PROPERTY" Clause contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

- (a) SELLER's personnel, while on BAE SYSTEMS' or Customer's premises, shall not sell, advertise or market any goods or services (other than the goods or services which may be the subject of this Contract) or memberships, or distribute printed, written or graphic materials without BAE SYSTEMS' written permission or as permitted by law.
- (b) SELLER must coordinate in advance with BAE SYSTEMS access to BAE SYSTEMS' or Customer's premises
- (c) SELLER shall, at its sole cost and expense obtain and maintain in force throughout the original term, and any extension, of this Contract (to include the warranty period), the following minimum limits of insurance placed with a company reasonably acceptable to BAE SYSTEMS, each of which shall be primary to any insurance of BAE SYSTEMS:

See BAE GOVCON Terms and Conditions for negotiated insurance level requirements.

- (d) The insurance coverage and limits required of the SELLER under this Contract are designed to meet the minimum requirement of BAE SYSTEMS. They are not designed to limit the SELLER'S liability under this Contract or as a recommended insurance

program for SELLER. The SELLER alone should seek professional assistance if the SELLER has any question concerning its exposure to loss under this Contract or the applicable insurance coverage that may be necessary to address such exposure.

- (e) SELLER shall cause BAE SYSTEMS its directors, officers, employees and agents to be named as an additional insured under each of the insurance policies required by this Contract, except Workers Compensation. Insurance maintained pursuant to this paragraph shall be considered primary as respects the interest of BAE SYSTEMS and is not contributory with any insurance that BAE SYSTEMS may carry.
- (f) All policies, including Workers Compensation, shall contain a Waiver of Subrogation in favor of BAE SYSTEMS.
- (g) SELLER shall, before commencing work under this Contract, deliver a Certificate of Insurance and/or actual insurance policies required by this Contract. Any Certificate of Insurance shall contain a provision that the coverage provided under the policies, as well as the policies, will not be canceled or materially changed unless the insurers provide BAE SYSTEMS with thirty (30) days written notice of the intent to cancel a policy, or materially change the coverage provided under the policy.
- (h) Unless otherwise specified in this Contract, SELLER shall be responsible for supplying all tools and equipment necessary to perform its Services under this Contract.

#### 108. INTELLECTUAL PROPERTY

In addition to, and without limiting, the "INTELLECTUAL PROPERTY" Clause contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

- (a) To the extent that any deliverable items may not, by operation of law, be works made for hire, SELLER hereby assigns to BAE SYSTEMS the ownership of copyright in the deliverable items and BAE SYSTEMS shall have the right to obtain and hold in its own name copyrights, registrations and similar protection which may be available in the deliverable items. SELLER shall provide to BAE SYSTEMS or its designees all assistance reasonably required and documentation necessary to perfect such rights

#### 109. MAINTENANCE OF RECORDS

In addition to, and without limiting, the "MAINTENANCE OF RECORDS" Clause contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

SELLER's records shall also include time records, phone bills, travel receipts, expense reports, and job summaries.

#### 110. MECHANICS AND OTHER LIENS

- (a) **EXCEPT AS PROVIDED BY THE MILLER ACT, 40 U.S.C. 3131 et seq., TO THE EXTENT PERMITTED BY LAW, SELLER AGREES THAT IT WILL NOT ASSERT ANY MECHANICS LIEN, OR ANY OTHER LABOR OR MATERIAL LIEN, AGAINST ANY PROPERTY OWNED BY OR IN THE CARE, CUSTODY OR CONTROL OF BAE SYSTEMS TO SECURE PAYMENT OF ANY AMOUNTS THAT MAY BECOME DUE TO SELLER FOR FURNISHING ANY LABOR OR MATERIAL IN PERFORMANCE OF THIS CONTRACT OR FOR PERFORMING ANY WORK ASSOCIATED THEREWITH. SELLER UNDERSTANDS THAT BY ACCEPTING THIS CONTRACT IT HAS WAIVED ITS RIGHTS (IF ANY) TO ASSERT A LIEN AND IT WILL BE PRECLUDED FROM EXERCISING THE MECHANICS LIEN RIGHTS IT MAY**

**OTHERWISE BE AFFORDED UNDER APPLICABLE STATE LAW. SELLER SHALL COOPERATE IN PROVIDING AND FILING ANY WAIVERS AND/OR RELEASES OF LIEN THAT BAE SYSTEMS MAY REQUIRE. IN THE EVENT THAT APPLICABLE LAW DOES NOT PERMIT THE SELLER'S WAIVER OF LIENS IN ADVANCE, SELLER AGREES THAT IT SHALL FOREBEAR FROM FILING A LIEN UNLESS AND UNTIL IT COMPLETES THE WORK REQUIRED BY THE CONTRACT AND WILL PROVIDE A RELEASE AND WAIVER SIMULTANEOUS WITH FINAL PAYMENT UNDER THE CONTRACT.**

- (b) **SELLER agrees to secure releases and waivers of lien in favor of BAE SYSTEMS from SELLER's suppliers and subcontractors coincident with SELLER's final payments to them.** In the event any of SELLER's suppliers or subcontractors assert a mechanics lien, or any other labor or material lien, against any property owned by or in the care, custody or control of BAE SYSTEMS, BAE SYSTEMS at its election may immediately satisfy such lien and charge all amounts (including reasonable attorney's fees) associated with satisfying such lien to SELLER and/or offset such amounts against payments owed to SELLER.

#### 111. OCCUPATIONAL SAFETY AND HEALTH

SELLER shall notify BAE SYSTEMS promptly in writing if a charge of noncompliance with the Occupational Safety and Health Act of 1970, as amended has been filed against SELLER arising from or related to SELLER's Services performed hereunder on premises owned, leased or operated by BAE SYSTEMS.

#### 112. FAILURE TO MEET PAYROLL

If SELLER fails to meet its payroll or employee benefit obligations and such failure disrupts, delays, or otherwise hinders delivery and/or performance of Work under this Agreement and/or BAE SYSTEMS' prime contract, BAE SYSTEMS may, without accepting responsibility or liability for SELLER's payroll or employee benefit obligations, solicit, recruit, hire, or otherwise employ or retain SELLER's employees who are deemed by BAE SYSTEMS to be necessary for delivery and performance of the Work being provided under this Contract. Any action taken by BAE SYSTEMS under this Article shall not relieve the SELLER of any liability for default under this Contract.

#### 113. NON-SOLICITATION AGREEMENT

- (a) During the Contract and for one (1) year after expiration or termination of this Contract, BAE and SELLER agrees that neither they, nor its employees directly supporting this Contract or the BAE SYSTEMS' prime contract shall recruit, solicit, or assist in the recruiting or soliciting for employment, including as a consultant, any technical or professional employees of BAE SYSTEMS who are supporting this Agreement or BAE SYSTEMS' prime contract, without prior written approval from the other party. Notwithstanding the foregoing, the parties may utilize non-targeted recruiting efforts without violating this Article
- (b) The parties acknowledges and agrees that in the event of a violation of this Article, there are no adequate remedies at law and the SELLER or BAE SYSTEMS will suffer irreparable harm entitling it to seek immediate injunctive relief in addition to any and all other available
- (c) legal remedies it may have.

#### 114. WARRANTY

In addition to, and without limiting, the "WARRANTY" Clause contained in the BAEDOC(s) applicable to this Contract, the following additional provisions shall apply:

- (a) SELLER warrants that it is and shall remain free of any obligation or restriction which would interfere or be inconsistent with, or present a conflict of interest concerning, the Services to be furnished by SELLER under this Contract.
- (b) SELLER warrants that it will perform the Work under this Contract with the degree of professional skill and sound practices and judgment that is normally exercised by recognized professional firms with respect to services of a similar nature.
- (c) If the Services fail to conform to the foregoing warranty, SELLER, at BAE SYSTEMS' option, shall, without additional charge, promptly re-perform such Services to meet commercial standard. If re-performance of the Services is not timely or fails to correct the non-conformity, BAE SYSTEMS may elect to replace, re-procure or re-perform the Service to meet the commercial standard at SELLER's expense. All warranties shall run to BAE SYSTEMS and its Customers.
- (d) Malicious Technology
  - a. "Malicious Technology" means any software, electronic, mechanical or other means, device or function, e.g. (key, node, lock, time-out, "back door," "trapdoor," "booby trap," "drop dead device," "data scrambling device," "Trojan Horse,") that would allow Provider or a third party to: (i) monitor or gain unauthorized access to any BAE SYSTEMS system, (ii) use any electronic self-help mechanism or (iii) restrict, disable, limit or impair the performance of a BAE SYSTEMS system.
  - b. SELLER warrants that the Services will not: (i) contain any Malicious Technology, (ii) monitor BAE SYSTEMS's use of the Services; (iii) replicate, transmit or activate itself without control of a person operating the computing equipment on which it resides; or (iv) alter, damage or erase any data or computer programs resident on BAE SYSTEMS computers or hardware without control of a person operating the computing equipment on which it resides. If SELLER is in breach of this subsection, no "right to cure" period will apply. BAE SYSTEMS reserves the right to pursue any available civil or criminal action against SELLER for violation of this provision. SELLER will not install, use or execute any software on any BAE SYSTEMS CPUs without BAE SYSTEMS's written approval. SELLER acknowledges that it does not have any right to electronically repossess or use any self-help related to the Services.

## **BAE SYSTEMS**

BAE Systems Ordnance Systems, Inc.  
Radford Army Ammunition Plant  
State Route 114, P.O. Box 1  
Radford, Virginia, USA 24141



### **APPENDIX "J" – GENERAL CONDITIONS FOR SUBCONTRACTORS PERFORMING WORK AT THE RADFORD ARMY AMMUNITION PLANT**

#### **1. DEFINITIONS**

- a) BAE Systems (BAE) means the Radford Army Ammunition Plant (RFAAP) Department of the Army location
- b) Purchase Order and Subcontract are synonymous.
- c) Vendor and Subcontractor are synonymous.
- d) Buyer and Subcontract Administrator are synonymous.
- e) Engineer shall mean the BAE Engineer.
- f) Job Representative shall mean the BAE Job Representative.
- g) Engineer and Job Representative are synonymous.
- h) Buyer shall mean responsible person issuing Purchase. Order.
- i) The words "plant" and "reservation" are synonymous and includes all land and property of Radford Army Ammunition Plant (RFAAP), including the New River unit at Dublin, VA.

#### **2. SAFETY, SECURITY AND ENVIRONMENTAL RULES AND REGULATIONS**

Vendor shall adhere to all safety, environmental and security rules and regulations as more fully described in the safety handbook entitled "Safety, Security and Environmental Rules for Contractors, Subcontractors, Tenants and Government Employees." A copy is distributed at the prebid and pre-work meetings.

#### **3. VENDOR RESPONSIBILITY**

Vendor is not relieved of any responsibility because of ignorance of conditions or by any prior **understandings**.

In the event such a condition is found, or if other work is necessary that is not described in the specifications, such conditions and/or work will be called to the attention of the BAE Buyer.

#### **4. VENDOR WORK SCHEDULE (If applicable)**

BAE will furnish the Vendor a tentative schedule of buildings, structures, items, and the sequence the work is to be performed. All schedules furnished by BAE may be subject to change due to operating conditions and production schedules.

#### **5. WORK DAY**

The normal workday is from 8 a.m. to 4:30 p.m., Monday through Friday. Any request to change these hours shall be submitted in writing to the BAE Engineer at least seven days prior to change. **Under no circumstance will Vendor begin new hours without permission from BAE.**

#### **6. HOLIDAYS**

The Vendor shall observe the following plant holidays, unless otherwise designated by BAE:

New Year's Day	Thanksgiving
Good Friday	Friday after Thanksgiving
Memorial Day	Christmas Eve
Independence Day	Christmas Day
Labor Day	New Year's Eve



**7. PRE-WORK MEETING** (Not required if escorted.)

Prior to starting work, a meeting between Vendor's representative and BAE's interested parties (Engineering, Safety, and Security) is required.

Purpose of this meeting is to review all aspects of Safety, Security, and other pertinent RFAAP rules, regulations and requirements with specific attention given the scope of work to be performed.

At this meeting, final plans to start work will be made.

**8. FACILITIES OR UTILITIES TO BE FURNISHED BY BAE TECHSYSTEMS**

Unless otherwise specified, BAE will furnish drinking water and toilet facilities where they are now permanently located and designated. No new or temporary facilities will be provided. Other services or utilities such as electrical service, steam, air, etc., will be provided only as approved by BAE. Modifications for connections will be the responsibility of the Vendor.

BAE reserves the right to discontinue services when the use appears to be excessive or abused.

**9. FACILITIES FOR EMERGENCY MEDICAL TREATMENT**

If requested, BAE will supply emergency medical treatment to Vendor's employees, under the terms and conditions and rates as stated below:

<b>SERVICES</b>	
Urinalysis (micro)	\$25.00
Hemoglobin	25.00
X-ray	60.00
Physician Services:	
Brief	40.00
Intermediate	90.00
Extended	120.00
Nurse Services	20.00
Drugs:	
Nonprescription	5.00
Prescription	10.00
Injection	20.00
IV Fluid	50.00
Other Appliances:	
Ace (Small)	7.00
Ace (Large)	15.00
Other Sprints	25.00

BAE will bill the Vendor for all services rendered. Vendor shall promptly make payment directly to BAE all invoiced charges incurred by its employees or it's Lower-Tier Vendors.

BAE is not engaged in the operation of a hospital for profit at RFAAP, but is providing emergency medical facilities in connection with work being performed under its contract with the United States Government. In providing these services, BAE will employ all reasonable care, but assumes no responsibility for performance or delay.

Emergency medical services will be provided to an employee upon presentation of a written authorization from the Vendor (including name of Lower-Tier Vendor if applicable).

## **10. INSURANCE & INDEMNIFICATION**

Insurance Requirements Identified within Terms & Conditions

## **11. INDEMNITIES**

- a) Both Parties shall defend, indemnify, and save the other party, harmless from and against all liability, loss or expense (including costs and attorneys' fees) for any suit, claim, settlement, award, penalty, fine or judgment (hereinafter referred to singly or collectively as "Claim") because of --
  - personal injury (including death at any time resulting therefrom);
  - loss of or damages to property (including loss of use thereof);
  - contamination of, adverse effects on, or damage to the environment or the violation of any environmental law or regulation;sustained or brought by any person or persons (including government agencies, third parties, or BAE, Contractors' or Subcontractors' employees, agents or servants), arising out of, resulting from, or in consequence of the performance of the work under this Contract, while such injury, loss, damage or contamination is caused by the negligence or willful act or omission of the Contractor/service provider and/or their employees or agents, but excluding Claims caused by the sole act or omission (whether negligent or otherwise) of BAE.
- b) Contractor shall, upon BAE ' request, permit BAE to participate in the defense or settlement of any Claim against BAE which is subject to the provisions of this Article.
- c) Contractor shall obtain indemnity protection from all Subcontractors for the benefit of BAE, which protection shall include provisions which are no less stringent than the provisions of this Article.
- d) The provisions of this Article shall survive the expiration or termination of this Contract.

## **12. TEMPORARY SERVICE PERSONNEL**

It is anticipated employees will work at least four hours each workday (Monday through Friday) except for holidays, starting at 8 AM and not more than eight hours between 8 AM and 4:30 PM with one-half hour unpaid lunch period.

- a) Upon receipt of a Material Requisition for temporary services, Buyer shall determine if the Service Contract Act (SCA) applies and what the minimum SCA wage rate shall be.
- b) The hourly rate shown will be paid for services actually performed on plant site at RFAAP and include all costs (labor, travel, insurance, incidentals, etc.) associated with the furnishing of the services described.
  - It is the Buyer's responsibility to determine if the Service Contract Act applies and what the established minimum SCA wage rate shall be.
- c) The total cost for said services for the initial period stated shall not exceed value listed elsewhere in purchase order without prior written authorization from BAE.
- d) The initial period of services contemplated will run the stated period.
- e) A daily log of hours worked will be maintained by BAE supervisor to whom employee reports and agreed to by Vendor and BAE supervisor and will become the basis for billing under the hourly rate provisions. Payments are to be bi-monthly upon submission of invoices, in duplicate, by Vendor; invoices must reference purchase order number.
  - Temp employees time cards shall be maintained by the BAE Supervisor to whom they report and the supervisor shall be responsible to assure that the employee does not exceed stated hours of the contract period.
- f) No representation is made by BAE that the Vendor's services will be required for the entire period specified, and it is understood and agreed that this agreement may be terminated at any time by either party upon written notice to the BAE Buyer.

NOTE: IT IS UNDERSTOOD AND AGREED THAT MINIMUM REQUIREMENT WILL BE FOUR HOURS PER DAY PER TEMPORARY EMPLOYEE.
- f) Vendor agrees to indemnify and save BAE and the Government harmless from all claims and actions arising out of, or in connection with the work performed by it hereunder, because of property damage, personal injury or death sustained by anyone as a result of either the negligence or the intentional acts of Vendor or of anyone employed directly or indirectly by him.
- g) The Vendor, for the purpose stated, voluntarily assumes the risk of entering and being upon RFAAP, and also, for him, his heirs, executors and administrators hereby releases and discharges the United States Government and BAE from any and all liability of any kind or character whatsoever, due to any injury, damage or loss he may suffer from any cause whatsoever while upon said plant premises.

- h) The Vendor hereby agrees that it will procure all necessary permits and licenses; obey and abide by all applicable laws, regulations, executive orders and ordinances and other rules of the United States of America, of the States territory or subdivision thereof wherein the work is done, or of any duly constituted public authority. Vendor further agrees to indemnify and save BAE harmless from and against any liability expenses or loss resulting from Vendor's constituted public authority. Vendor further agrees to indemnify and save BAE harmless from and against any liability expenses or loss resulting from Vendor's failure to comply herewith.
- i) All persons entering upon the premises at the direction, or with the consent of the Vendor shall submit to and comply with safety regulations, physical examination, searches of the person and other rules that BAE requires of its own employees.  
Note: If Contraband material is in the vehicle when approaching the security gate, simply declare it to the Security Guard and turn it in before entry. The employee will not get in trouble for this and can pick up the Contraband items when you leave the Radford Reservation.
- j) The Vendor, at all times, shall exercise reasonable precautions for the safety of employees on the work and shall comply with all applicable provisions of Federal, local, state, and municipal safety laws and construction codes.
- k) All contractor personnel must receive a security and safety briefing prior to being badged. BAE has the option to brief a contractor's representative of the safety and security elements and, in the future, it would be that person's responsibility to brief new employees prior to badging. The new employee must bring with them the signed safety statement located in the back of the Contractor Safety Handbook. Note: Paragraph 21, Security Badges Requirement for Vendor Personnel.

### **13. DRAWINGS AND SPECIFICATIONS**

- a) Vendor must carefully study the plans and specifications before proceeding with any work. All conditions in either the plans or specifications that are not thoroughly understood shall immediately be brought to the attention of the BAE Engineer.
- b) The Vendor, at his own expense, shall furnish BAE with two copies of all sketches or drawings needed to properly execute the work.
  - One copy of all drawings and specifications shall be kept on the job site in good order, and available to the engineer at all times.

### **14. STORAGE AREAS OR BUILDINGS, OFFICES, AND OPERATION AREAS**

When available, BAE shall provide storage areas or buildings and offices. BAE reserves the right to designate the manner, quantities, and type of materials or equipment stored or used.

Temporary buildings, facilities, office/storage trailers, and utilities may be cited or erected by the Vendor only upon the written approval of BAE Engineer and shall be built or placed and dismantled or removed at the Vendor's expense.

### **15. NOTIFICATION (Non-Emergency Work)**

Vendor must notify the BAE Engineer, ten days prior to starting work. This will allow BAE sufficient time to make arrangements for buildings and/or facilities to be available.

### **16. RESPONSIBILITY REGARDING EXISTING UTILITIES AND STRUCTURES**

The existence and location of underground utilities indicated on the plans or specifications are not guaranteed and shall be investigated and verified in the field by the Vendor before starting work. Excavation in the vicinity of existing structures or utilities shall be carefully done by hand.

The Vendor will be held responsible for repairing or replacing any damage to (and for the proper protection of) utilities and structures in the area of his work unless otherwise specified. However, BAE reserves the right to repair or replace any damage or destruction of utilities (power, water, communications, etc.) or property that constitutes a hazard to personnel or property or will interfere with the normal operation of the plant. BAE shall submit an itemized statement of expenses incurred in the repairs or replacements, and within thirty days after receipt of statement, Vendor will reimburse BAE for the full amount shown on the statement.

If any temporary changes or alterations in water, oil, or gas pipelines, sewers, drains, conduits, fences, tracks, electric lines or power lines; telephone or other wires, poles, etc., are necessary, for the convenience of the Vendor or for the

performance of the work, the responsibility for making such changes will rest with the Vendor. Unless provided elsewhere in this agreement, Vendor shall arrange for making such changes at their own expense with approval of BAE Engineer.

The Vendor shall carefully preserve benchmarks, reference points and stakes, and in case of willful or careless destruction, the Vendor will be charged with the resulting expense and shall be responsible for any mistake that may be caused by their unnecessary loss or disturbance.

#### **17. INTERRUPTION OF UTILITY SERVICES**

Written request for the interruption of any plant utility must be submitted to the Engineer within fourteen working days prior to date interruption is expected. Vendor must have written approval from the Engineer before discontinuing any utility service.

If a road is to be blocked, a written request for approval of Vendor's proposed blockade should also be submitted to the Engineer. This should include a sketch showing proposed detour and proper warning signs.

#### **18. ORDER OF COMPLETION**

When requested by BAE Engineer, the Vendor shall submit (for approval) schedules showing the order and dates Vendor proposes to carry out the work. The Vendor shall not deviate from approved schedules given in the plans and/or specifications without written permission from BAE Engineer.

#### **19. LISTING OF VENDOR'S EMPLOYEES** (Applicable if work effort extends more than two weeks and employees are issued a security badge)

- a) A daily work attendance roster must be delivered to Bldg. 235 by 8:30 a.m., each workday listing employees present and their work location. Forms are provided with a copy of the Purchase Order.
  - As a follow-up to the report, Security will make regular checks of Vendor work sites, to verify accuracy of the daily reports. If employees are not in the area specified, or employees not listed are in the area, an inquiry will be made.
  - If the matter cannot be satisfactorily resolved with Vendor supervision, the Government Security Officer will be notified and a police report prepared.
- b) All identification badges and vehicle decals issued to employees working for Vendor or Lower-Tier Vendor shall be turned in to Security the last workday.
  - Before final acceptance of the work effort is made by BAE Engineer, Vendor must obtain clearance from Security.
  - Final payment against the Purchase Order shall be withheld until all badges issued have been resolved and to Security's satisfaction.

#### **20. TWO-WAY RADIO**

The Vendor will be permitted to operate or use two-way radio equipment **only** with the prior authorization of the BAE Engineer.

#### **21. TOOLS, EQUIPMENT, AND MATERIAL**

No tools, equipment, or material shall be delivered to or placed on plant site until Vendor is prepared to receive it.

BAE shall reserve the right to inspect all materials, tools, tool boxes, equipment, etc., that are the property of the Vendor at any time whether at the job site or stored in a warehouse.

Government-owned property will not be removed from the plant areas unless accompanied by an approved shipping document and DUP-3970 (Visual Inspection and Hand Receipt for Government-Owned Property at Time of Delivery). Issued by BAE Engineer.

- a) If performance time for this project is expected to be **two weeks or less** the following applies:
  - 1) An BAE representative must escort vendor at all times.
  - 2) Vendor will be permitted to process tools and equipment in and out of the plant escorted by project engineer. Security and Receiving do not get involved The BAE representative is responsible
- b) If the performance time for this Purchase Order is expected to be **more than two weeks**, the following shall be done:
  - 1) All tools and equipment that are the property of the Vendor **MUST** be processed through Receiving, incoming and outgoing.



- 2) The Vendor shall prepare a list of all tools and equipment delivered and/or brought on the plant site, whether by motor carrier, rail carrier, or other vehicles. Receiving verifies inventoried items and retains a copy. Upon completion of job and removal of equipment, Vendor and Receiving verify that items being removed are the same as those delivered.
- 3) If a vendor plans to remove any equipment or tools before completion of the job, a duplicate copy of the list is taken to Security.
- 4) Any item not listed and received by BAE will not be released from the plant, except by the BAE Engineer in charge of job. The engineer issues a property pass and obtains Receiving's approval.
- 5) All Vendor materials brought on plant and going to the "limited area" shall be processed through Receiving. This clause is applicable to Purchase Orders with performance time expected to exceed two weeks; however, less than two weeks, processing shall be through the Security Department only. Security issues a pass to accompany the materials

During the progress and upon completion of the work, the Vendor shall notify Receiving prior to removing his materials from the plant site. The Vendor and Engineer will inventory materials and Receiving has final approval. After the vehicle(s) have been inventoried, Engineer will issue and approve a pass for Vendor-owned materials. The material will be certified "These Items Are Not Contaminated," and signed by the BAE Engineer.

## **22. SECURITY BADGES AND RELATED REQUIREMENTS**

### **VENDOR/SUBCONTRACTOR PERSONNEL**

All persons performing work on the RFAAP site must have a security badge. These badges are either temporary visitor (two weeks or less) that requires a BAE escort at all times, or a permanent type (two weeks or more) badge which permits wearer to pass in-and-out of the security gates to-and-from his work area without a BAE escort. Temporary badges are issued for a one-week period and renewable for another one-week period, maximum of two weeks. Badges, regardless of type, **must** be turned in to Security upon completion of the work effort. Failure to turn in badges will result in withholding of payment until all badges have been accounted.

A Vendor representative must escort all personnel obtaining a badge to Security. This representative signs documentation that his employee meets BAE criteria and is suitable for a badge to be issued.

**All persons requiring a work badge or picture badge must fill out the BAE Systems Badging Verification Form. While several forms of identification are acceptable, the most common are an Original or Certified Copy of a Birth Certificate or your U.S. Passport or Card. Please note:**

**All persons who are non-US citizens shall have on their person their Green Card and written approval from the local BAE Systems Security Manager, Army Staff Security Officer, or the Commanding Officer before a badge can be issued. BAE Systems must have a minimum of 7 days' notice of all foreign nationals coming to visit RFAAP.**

On those Purchase Orders expected to exceed two weeks, the following Pre-Employment Investigation of Vendor's employees shall be applicable prior to being issued their security badge:

### **BACKGROUND CHECKS**

The applicant shall provide BAE Systems a **National Agency Check with a Social Security Trace**. This background check will need to be submitted prior to employment to avoid complications. There are multiple companies that can be accepted. Some of the ones that are already approved by BAE Systems are; **Sentrylink, Proforma Screening Solutions, Sterling, General Information Service, and Selection.com**. Request for other screening companies will need to be submitted to the BAE Systems Security for final approval. Below are some items that can prevent employment at Radford Army Ammunition Plant.

- Who deliberately falsifies, misrepresents, or omits material facts on the job application form;
- Whose activities indicate he/she is not reliable or trustworthy;
- Whose actions demonstrate dishonest, immoral, or notoriously disgraceful conduct;
- Who suffers from chronic alcoholism or habitual use of intoxicants;
- Who suffers from drug addiction or habitual use of drugs;
- Where the facts provide reason to believe the applicant would be susceptible to coercion, influence, or pressure which could cause him to act contrary to the interests of the national security or the best interest of the United States Government.

**Note: Individuals with a Visitors Badge being escorted by a badged employee or subcontractor do not require a background check. Visitors must be under escort at all times.**

#### **ADVERSE CHANGES IN EMPLOYEE STATUS**

While the initial background check is a requirement to be badged at the Radford Army Ammunition Plant, it is the employers responsibility to report any adverse changes in the employee's status. This includes but is not limited to criminal charges, drug / alcohol addictions, arrest warrants, and incident reports. Failure to report such adverse changes could result in termination of your subcontract.

#### **REQUIREMENTS**

The new picture badge will be held at the Visitors Center until the background check has been completed successfully. The applicant will be given a visitor/escort required badge to use until such time the picture badge is issued. A BAE employee or badged Subcontractor employee is responsible to provide the escort.

**Note: This requirement is for domestic employees only.**

Upon completion of such investigation, the Vendor shall furnish to Security an executed Form DUP3871 (attached), showing name, address, date, and place of birth, citizenship, Social Security number, and whether or not the employee has been convicted of a crime and shall certify to BAE that the application of employee has been investigated and is acceptable for employment at RFAAP.

#### **NOTIFICATION**

In accordance with AR 190-11, chapter 2, paragraph 11, background checks "will be repeated every 3 years". We will follow that guideline and require a new background check every three (3) years from the date of the previous check for all contractors who have remained continuously pictured badged for that period of time provided no new information, conditions or incidents are reported. For those persons who have not been pictured badged for a period of 6 months or longer but whose background checks are still valid (within 3 years): the valid background check will be accepted if it is accompanied by a letter from the employer stating that the employee has been in continuous employment and there have been no disqualifiers reported during that time. A new background check will be required for those persons who have not been picture badged for a period of 6 months or longer and have changed employers since the background check was conducted (i.e. the employer cannot verify that the person has no new charges against him/her).

#### **SECURITY RESPONSIBILITIES OF THE SUBCONTRACTOR**

All consultants, independent contractors / subcontractors, suppliers, vendors, and tenants who require unescorted access to unclassified export controlled areas of the Buyer's site shall confirm in writing that their agents or employees requiring such access meet one of the following criteria:

- a. A citizen of the United States, or
- b. A lawful permanent resident as defined by U.S.C. 1101(b)(20), (i.e. Green Card Holders) or
- c. A protected individual as defined by 8 USC 1324b(a)(3), or
- d. A foreign national for whom a current and directly relevant license or approval has been obtained from the United States Department of State.

Your company shall conduct random sampling audits on a monthly basis with your staff that works at the Radford Army Ammunition Plant and assure they are in compliance with the U.S. Person status requirement.

Any consultant, subcontractor, vendor or tenant that are not in compliance, will be found in violation of BAE Systems terms and conditions and subject to penalties up to and including denied access to the Radford Army Ammunition Plant, removal from the approved vendors / subcontractors list, and debarment from government contracting.

#### **23. DRUG AND ALCOHOL POLICY AND CONTROL**

Under BAE's Drug and Alcohol Policy, testing will be required for all pictured badged employees, tenants, and subcontractors annually. Before any subcontractor employee is issued a badge, the subcontractor must confirm that a drug

test (screen) has been performed on the employee within the calendar year the badge is requested. If applicable, the subcontractor's employee must bring current prescription(s) to the plant hospital and/or security office located in the Visitor's Center, for documentation purposes only. BAE reserves the right to request written verification from the physician or health care provider. **Note: Individuals with a Visitors Badge being escorted by a badged employee or subcontractor do not require a drug screen. Visitors must be under escort at all times.**

It should be known, that BAE reserves the right to expand the types of substances tested for, and perform any other related tests that may be required in the future. Any such employee who tampers, adulterates, or otherwise interferes with a test will be deemed to have refused to take the test.

The use, possession, sale, transfer, or purchase of illegal drugs or alcohol on plant is prohibited. Entry upon plant site constitutes consent to an inspection of the employees and his or her personal effects when entering or leaving plant site.

**Refusal to Consent:**

A subcontractor employee has a legal right to refuse to be tested. If the employee refuses to consent to an alcohol or drug test they will be escorted off BAE property by BAE security and will not be permitted to perform work at BAE.

**Drug and Alcohol Conviction:**

A subcontractor employee, who is convicted for alcohol-related offense or criminal drug statute violations occurring while performing work at BAE, must notify the BAE Safety Department, in writing, of any such conviction.

**Confidentiality/Access to Results:**

Any subcontractor employee will be allowed access to, and may make a written request for a copy of his/her test results on any drug or alcohol test performed. Test results and all information acquired in the testing will be treated as confidential, but will be released to the subcontractor and other persons with a need to know.

**Drug Screens Must Comply with the following:**

- a. The drug screen results must be on the letterhead of the clinic, hospital, doctor's office or lab that administers the test.
- b. The drug screen document must include the donor's authorization to release the information.
- c. The signature and title (doctor, nurse, lab tech) of the person who administers the test and reads the test must be included in the document.
- d. The actual results, by drug tested, the time and the date the screen was administered must be stated on the document. We cannot accept a written statement that the results of the drug screen came back okay or negative, we need the individual drug results.
- e. The drug screen will have been done within 12 months of the day the picture badge is requested. If the badge is renewed after the initial expiration date of the contract, a new drug screen will be required at the time the badge is updated.
- f. We will accept the drug screen required for a CDL license (5 panel) but would rather have a 7 or 9 panel screen.

**24. BAE TECHSYSTEMS' DEBARMENT OF VENDORS AND/OR THEIR PERSONNEL**

BAE may, at its discretion, remove from the plant site and debar from working at RFAAP any Vendor's employee who is:

- a) Found smoking inside the plant's limited area and not in a designated smoking area.
- b) Under the influence of alcoholic beverages as determined by BAE.
- c) Under the influence of illegal drugs as determined by BAE.
- d) Found to be in an unfit condition (mental or physical) for work as determined by BAE and/or the Vendor employee's supervision.

Continued violations of the above by a Vendor's employees will result in the Vendor being debarred from performing work at RFAAP.

**25. SAFETY INSPECTIONS AND VENDOR EMPLOYEE TRAINING**

The BAE Safety Department will conduct routine inspections of all subcontract work. The inspections will be used to ensure that all safety as well as PSM requirements are being met. If an employee is interviewed and found to be unaware of the specific job hazards or the general plant hazards, they will be asked to leave the premises until they can meet this requirement.

In accordance with OSHA and BAE regulations concerning Process Safety Management (PSM), all subcontract employees shall be properly trained concerning their specific job requirements and hazards, as well as the overall hazards of the general plant. These hazards are discussed in pre-work meetings held for each individual subcontract,

as well as in the Subcontractor Safety Handbook, which all employees must read and sign. The special provisions located in the subcontract specifications also contain information concerning various hazards that may be encountered while working at RAAP.

As part of the pre-work meeting; any contractor, subcontractor, service technician or consultant who is working in the Limited Area at RFAAP, must view the Operation Bareface Video in accordance with BAE Safety Procedures. Viewing this video will also be required at the time of any picture badge renewals, and the individual employees must sign off and certify they have viewed the Operation Bareface Video.

## **26. SAFETY PRECAUTIONS**

- a) Under no circumstances shall the Vendor allow his employees to enter buildings or facilities or operating areas not involved in the work, unless BAE has given specific permission to do so.
- b) The Vendor will not be permitted to operate any internal combustion engine, nor permit his employees to work on or within 50 feet of any explosive operating building.
- c) The Vendor's employees will not be permitted to walk on, stand on, or support ladders, scaffolds, or pickboards on any process or utility pipelines, equipment, vessels, or unstable objects.
- d) The Vendor shall keep the work areas of explosives process and storage buildings saturated with water during demolition or alteration. While the facility is relatively clean of visible propellants, the potential for small amounts of contamination in hidden cracks and crevices still exist. The presence of BAE personnel shall not, in any way, alleviate the Vendor from their responsibility of keeping working surfaces wet during demolition, and being alert for potential hazards. BAE or the Government will not, in any way, be liable for any injury or damage done to the Vendor or their employees as a result of any explosive material.
- e) The Vendor shall report the presence of any propellant or unfamiliar materials to the BAE Engineer. The Vendor shall advise BAE of any unique hazards presented by the Vendor's work, or of any hazards found by the Vendor's work.
- f) The Vendor shall report all injuries sustained by Vendor's employees (including lower tier) on this Purchase Order to the RFAAP contact within 24 hours of the occurrence of the injury. Failure to report injuries could result in withholding of partial or final payments, and the Vendor being debarred from performing work at RFAAP.

## **27. PERSONAL PROTECTIVE EQUIPMENT**

Hard hats, eye protection, and steel-toed safety shoes shall be worn by all Vendor' personnel. This applies to all craftsmen, supervision, and other visitors. Additional equipment may be required as detailed in the specifications. The furnishing and maintaining of these items shall be at Vendor's expense. The BAE Engineer and Safety Department must authorize any deviation from this requirement.

## **28. SECURITY & SAFETY REQUIREMENTS**

- a) The Vendor agrees that its agents and employees shall confine themselves to the immediate area in which the particular work is being performed.
- b) Vendor employees shall have free and uninterrupted access to the area required for the performance of the work.
- c) Vendor employees and agents shall enter and leave the site of operations as outlined on the orientation map and discussed at the Prewrite Meeting.
- d) All persons entering upon the premises at the direction, or with the consent of Vendor, shall submit to and comply with safety regulations, physical examination, searches of the person, and other rules that BAE requires of its own employees.
- e) Vendor further agrees to comply with all the requirements and standards that BAE maintains in the selection of its own employees, but nothing in this provision shall be construed as modifying the relationship of principal and independent contractor existing between BAE and the Vendor.
- f) **BAE shall, at all times, have access to the premises wherein the work described is being performed.**
- g) Vendor shall exercise reasonable precautions for the safety of employees, and shall comply with all applicable provisions of Federal, local, state and municipal safety laws and codes.

## **29. PROCESS SAFETY MANAGEMENT**

All work performed under this subcontract/purchase order will be subject to complying with OSHA 29CFR 1910.119 and associated BAE requirements.

### **a) Definitions**



- Contractor(s) - An independent businessperson, a supplier representative, or an organization for hire to perform work or provide services on RFAAP sites. This definition includes, but is not limited to, Corps of Engineers contractors, subcontractors/Vendors who may be hired by the primary contractor to perform certain parts of the agreed upon work or service, and BAE subcontractors/Vendors.
- Type A Contractors - A long-term, permanent contractor on site daily, required to maintain day-to-day operations (e.g., maintenance contractors, contract operators, etc.), with or without their own supervision, working in or adjacent to hazardous process areas.
- Type B Contractors - Construction or project contractors, with fixed job scopes and completion dates, working in or adjacent to hazardous process areas.
- Type C Contractors - Specialty or service contractors who are on-site on an as-needed basis working in or adjacent to a hazardous process area (e.g., leak repair, x-ray, hydro-blasting, insulators, etc.).
- Type D Contractors - Contractors engaged in delivery or other supply services, including but not limited to, janitorial services, food and drink services, laundry services, and delivery or other services. These services generally will not affect process safety.
- Third Party Contractor - Contractors working on RFAAP property on behalf of a third party employer (e.g., utility company contractors working on incoming power lines, maintenance/repair crews on pipelines crossing RFAAP property, etc.).
- Injury and Illness Total Recordable Rate (TRR) - The sum of the recordable injury and illness cases requiring medical attention beyond first aid. This includes all cases with and without lost workdays. The TRR is calculated by multiplying the total cases by 200,000 and then dividing by the total hours worked by all employees in the work group.
- Total Lost Workday (LWD) Case Incidence Rate - The sum of the Days Away from Work (DAW) and Restricted Work Activity (RWA) cases resulting from (1) an employee failing to report to work on his/her next scheduled shift, or (2) an employee who is unable to perform all of their normal job duties on his/her scheduled shift, due to a work-related injury or illness. The LWD rate is calculated by multiplying the total cases by 200,000 and then dividing by the total hours worked by all employees in the work group.
- Days Away From Work (DAW) Incidence Rate - The sum of the total Days Away from Work (DAW) injury and illness cases resulting from an employee failing to report to work on his/her scheduled shift due to a work related injury or illness. The DAW rate is calculated by multiplying the total cases by 200,000 and then dividing by the total number of hours worked by all employees in the work group.

**b) Safety Responsibilities of Subcontractors/Vendors to their employees:**

- Ensure that each employee is trained in the work practices necessary to safely perform his/her job.
- Ensure that each employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.
- Vendor shall document that each employee has received and understood the training required by this paragraph. The Vendor shall prepare a record that contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.
- The Vendor shall assure that each employee follows the safety rules of the facility including the safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel.

**c) Subcontractor/Vendor Report Requirements:**

- Report all injuries incurred on plant within 24 hours of their occurrence to the BAE Engineer, who will report this to Safety.
- Monthly, provide a copy of the OSHA 300 log that includes all injuries requiring such reporting to BAE Engineer who will report it to Safety.

**d) Subcontractor/Vendor Employee Files:**

- Type A and B subcontractors/Vendors shall submit the following information prior to bringing employees on plant site:
  - Employee's training record or certification of skill level
  - Confirmation of each employee's ability to understand verbal and written English (not applicable outside of United States).
  - Confirmation that a security background check has failed to reveal information that would disqualify the employee for the prescribed job. BAE has the right to refuse the service of individual Vendor employees based upon the information provided.

- It is the responsibility of the Vendor to ensure that BAE is informed of any changes in staffing of the above contracts.
- Long-Term Vendor employees of the "A" type must be certified by their company on an annual basis as to having received all required annual training (regulatory requirements, site requirements, etc.) as well as any skill training required by their work.
- Type A and B shall participate in industrial hygiene monitoring programs on the same basis as permanent BAE employees. This includes submission of proof of medical surveillance (pulmonary function, general physical condition) and fit test for any user of negative pressure air purifying respirators.

**e) Qualification of Vendors to Perform Work at RFAAP:**

Any Vendor desiring to perform work on plant site for BAE that is subject to Process Safety Management (PSM), must be qualified in accordance with OSHA Regulation 29 CFR 1910.119. Vendor must be qualified before an award of this Purchase Order can be made. Therefore, if you are not currently qualified, we request you submit the following with your bid proposal:

- 1) Safety training program
- 2) Substance abuse policy/program
- 3) Proposed site manager's safety performance for last three years

Also request the following for the current and previous two years:

- 4) Copies of the total company OSHA 200 log.
- 5) Injury and Illness Total Recordable Rate (TRR)
- 6) Total Lost Workday (LWD) Case Incidence Rate
- 7) Total Days Away From Work (DAW) incidence Rate
- 8) Workers Compensation "Experience Modification Rate"

**30. WORKING IN OR NEAR EXPLOSIVE AREAS**

When a Subcontractor's work effort "encroaches" on Explosive Manufacturing Operations at the Radford Army Ammunition Plant, formal permission from the U.S. Government ACO Safety Officer must be granted to the Subcontractor in the form of a written Waiver. DOD 4145.26-M states that information about subcontractors must be provided to the ACO and the subcontractor must follow the requirements of 4145.26-M.

It shall be the responsibility of the BAE Project Engineer to provide the applicable Hazardous Component Safety Data Statements (HCSDS) to Subcontractors with whom Construction, Maintenance, Demolition or A & E work will be contracted and provide this information to the Administrative Contracting Officer (ACO) Safety Office. The BAE Project Engineer shall work in conjunction with the BAE Safety Department to provide this supporting information to the ACO and request a formal Waiver to permit the Subcontractor to work within the Explosive Arcs as identified by the Safety Department.

**No work in or near explosive areas shall begin without the formal Waiver as directed by the ACO Safety Officer.** The formal approved Waiver shall be held by the BAE Safety Department and copies shall be provided to the BAE Project Engineer and the Buyer.

**31. ENVIRONMENTAL**

RFAAP maintains an Environmental Management System (EMS) which uses the ISO 14001 standard to address and manage our environmental program. The EMS covers the entire organization and drives legal compliance, pollution prevention, and continual improvement. Environmental stewardship is one of the facility's highest priorities. Ensure your work activities comply with environmental requirements and protect our water, air and land resources.

**Subcontractors shall be aware of RFAAP's Environmental Policy.** The key points of the Policy are to:

- Follow the rules (comply with all local, state, and federal regulations).
- Prevent pollution (minimize waste).
- Always get better (continually improve environmental performance).

**General requirements.**

- Maintain all necessary documentation and records associated with environmental compliance.
- BAE environmental engineers have the authority to suspend subcontractor operations with concurrence from BAE and subcontractor management. Subcontractor work can resume once they are in compliance with environmental requirements.
- The BAE Environmental Department is the sole point of contact with all environmental regulatory agencies with respect to any matter relating to or bearing upon a permit on which BAE and/or the Army is named as the permit holder. Do not provide any environmental information to regulatory agencies without permission from BAE Environmental Department.
- In the event of an environmental nonconformance or noncompliance associated with the contracted services, the subcontractor shall take corrective and/or preventive actions.
- Report any spills, leaks, or unusual air emissions to the Environmental On-call phone at (540) 230-8970.
- Participate in internal/external audits.
- Participate in the environmental cross functional team (CFT), as appropriate.
- Notify the environmental Department of any new activities which could affect environmental compliance.
- Be aware of the significant environmental aspects and related or potential impacts associated with your work, the environmental benefits of improved personal performance and the potential consequences of departure from specified procedures.
- For the latest list of significant environmental aspects, please contact the Environmental Department.

### 32. HOLD HARMLESS

The supplier agrees that when its employees, agents, contractors and/or lower-tier subcontractors enter premises occupied by or under the administrative control of BAE Techsystems in the performance of the order, it will indemnify and hold harmless BAE Techsystems, its officers and employees from any loss, cost, damage, expense, or liability by reason of property damage or personal injury of whatsoever nature or kind arising out of, as a result of, or in connection with, such performance occasioned in whole or in part by the actions or omissions of BAE Techsystems, its employees, agents, subcontractors, and/or lower-tier subcontractors; and supplier agrees that it will maintain proper and adequate insurance to protect themselves and BAE Techsystems from all claims whatsoever for damages resulting in connection with this work whether such claims arise from the operation of the supplier or of anyone directly or indirectly employed by it. Vendor assumes exclusive liability for any payroll or other taxes imposed upon the employer by a Federal or State law.

### 33. WEARING YOUR SECURITY BADGE:

All subcontracted employees must wear their security badge at all times while working on the RFAAP reservation in Radford, Virginia or Dublin, Virginia. The badge should be visible at all times and presented to the security guard upon entrance to the plant or the production area. The security guard may also request to see your badge upon exiting the plant.

**NOTE:** Due to national security your security badge **SHALL NOT BE WORN OUTSIDE** the military reservation at the Radford Army Ammunition Plant. If going off-plant for lunch, to pick up supplies or finishing the work day, you should remove your badge and put it in your pocket or in a non visible place. If you leave your badge in the glove box of a vehicle, the vehicle should be locked when unattended.

Failure to comply with this badge policy could result in your suspension from work at the Radford Army Ammunition Plant and / or cause the loss of a subcontract.

### 34. PROHIBITION AGAINST HARASSMENT AND SEXUAL HARASSMENT

It is the policy of BAE Systems, Inc. that all of our Business Groups and **Subcontractors** create a respectful, courteous work environment that is free from physical, psychological, visual, and verbal harassment.

BAE Systems along with its Subcontractors shall prohibit sexual harassment and harassment based on race, color, religion, sex, gender, national origin, age, status as a qualified individual with a disability, genetic information, pregnancy status, marital status, sexual orientation, status as a U.S. veteran, gender identity or expression, or any other characteristic protected by law. Harassment, sexual harassment, and/or intimidation will not be tolerated.

As a subcontractor you are responsible for flowing down and enforcing this policy. Any subcontracted employee found in violation of this policy, shall be banned from the RFAAP Reservation and if necessary may be escorted off of the reservation by Security. This is a zero tolerance policy and shall be taken seriously.

### **35. ENVIRONMENTAL RESPONSIBILITY**

The Subcontractor represents that each chemical substance constituting or contained in Work sold or otherwise transferred to BAE SYSTEMS hereunder is on the list of chemical substances compiled and published by the Administrator of the Environmental Protection Agency pursuant to the Toxic Substances Control Act "TSCA" (15 U.S.C. Sec. 2601 et seq.) as amended.

It is the policy of BAE Systems, Ordnance Systems, Inc. to follow the policy as given in the Federal Acquisition Regulations, (FAR) Subpart 23.2 as follows:

#### **23.200 Scope.**

(a) This subpart prescribes policies and procedures for—

(1) Acquiring energy- and water-efficient products and services, and products that use renewable energy technology; and

(2) Using an energy-savings performance contract to obtain energy-efficient technologies at Government facilities without Government capital expense.

(b) This subpart applies to acquisitions in the United States and its outlying areas. Agencies conducting acquisitions outside of these areas must use their best efforts to comply with this subpart.

FAR 52.223-2 Affirmative Procurement of Biobased Products under Service and Construction applies to this subcontract and is detailed in BAE Systems, Ordnance Systems, Inc. Appendix "E" Green Policy.

### **36. LIMITATION ON DAMAGES**

Except as otherwise provided in this Subcontract, in the event of either Party's failure to perform in accordance with this Subcontract, whether such failure is occasioned by the acts or omissions of either Party, its respective suppliers, or the BAE Parties, either Party may pursue any and all damages and remedies available under this Agreement and/or applicable law. Except as otherwise provided in this Subcontract, damages and remedies that may be recovered by either Party shall be limited as follows: For all claims, regardless of the basis on which the claim is made, the applicable party's liability for damages arising under or related to this Subcontract shall be limited to \$30M, \$30M being defined as the value including all changes and the maximum liability for damages. Neither Party shall be liable for any indirect, special, incidental or consequential damages, including but not limited to lost profits or business interruption losses, whether arising under contract, warranty, express or implied tort, including negligence, or strict liability, arising at any time from any cause whatsoever in connection with this Subcontract or performance hereunder, even if caused by the sole or concurrent or active or passive negligence, strict liability or other legal fault of either of the Parties, their members, directors, officers, employees, agents, representatives, parent companies, subsidiaries, affiliates, joint venture partners, successors and assigns, and each of their respective owners, partners, members, shareholders, directors, managers, officers, employees, agents, representatives and subcontractors at any tier.



SECURITY IDENTIFICATION BADGE REQUEST									
LAST NAME		FIRST NAME		MIDDLE NAME		EMPLOYEE ID #		RACE	
SEX	HEIGHT		WEIGHT	HAIR	EYES	EMPLOYER			
	Ft.	In.		BLACK	BROWN				
				BROWN	BLUE				
SOCIAL SECURITY NUMBER				BLOND	GREEN	BADGE ISSUE DATE			
				RED	HAZEL				
BADGE SN				GRAY	GRAY	BADGE EXPIRATION DATE			
				BALD					
BADGE NUMBER						COUNTRY/CITIZENSHIP			
DATE OF BIRTH (MM/DD/YEAR)			PLACE OF BIRTH			HAVE YOU EVER BEEN CONVICTED OF A CRIMINAL OFFENSE?			
						YES <input type="checkbox"/> NO <input type="checkbox"/>			
JOB TITLE			EMPLOYEE HOME ADDRESS						

DUP-3871, Revised 06/21/2012

DUP-3871, Revised 06/21/2012

**Loyalty Oath:** I do not advocate the overthrow of the present constitutional form of Government in the United States by force or violence. I am not a member of any organization or political party who advocates the overthrow of the present constitutional form of Government in the United States by force or violence.

**Badge Return Statement:** I certify that upon receiving a security identification badge, property of the U.S Government, that it will be used only as an official identification badge while upon the Radford Army Ammunition Plant (RFAAP) reservation, and I will be responsible for the return of this badge to the Security Department upon termination of employment and/or authorized activities at RFAAP.

**Permission for Search:** As a condition of employment at RFAAP, I hereby consent to a search of my person or personal property at any time while upon the premises of RFAAP.

**AUTHORIZED OFFICE USE ONLY BEYOND THIS POINT**

Investigation Completed: Pre Employment    Yes ☐    No ☐

TYPE OF BADGE		(Signature of Employee)	Date
Limited	<input type="checkbox"/> Government <input type="checkbox"/>	(Authorized Badging Signature)	(Phone)
Posted	<input type="checkbox"/> Contractor <input type="checkbox"/>		
220 Access	<input type="checkbox"/> Visitor <input type="checkbox"/>	(Issuing Official Signature)	Date
Dublin	<input type="checkbox"/>		

SECTION 01 10 00

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## SECTION 01 10 00

### STATEMENT OF WORK

#### 1.0 PROJECT OBJECTIVES

The Radford Army Ammunition Plant (RFAAP) is located 40 miles southwest of Roanoke, Virginia, and 5 miles northeast of Radford, Virginia in the New River Valley. Construction began in 1940 in anticipation of the United States involvement in World War II and production of propellants began in 1941. [REDACTED]

1. The [REDACTED] is approximately [REDACTED] and will house the [REDACTED]
2. The [REDACTED] is approximately [REDACTED] and will house the [REDACTED]
3. The [REDACTED] is approximately [REDACTED] and will house the [REDACTED]. In addition, the building will have [REDACTED]
4. The [REDACTED] is approximately [REDACTED] which includes the [REDACTED]
5. The [REDACTED] will be located in close proximity [REDACTED]. The [REDACTED] will include [REDACTED]

The facility shall have [REDACTED]

The objective of this Statement of Work (SOW) is to design, procure, and construct (including construction checkout, and water runs) the new NC Area Acid Tank Farm [REDACTED], a Nitration area [REDACTED], Stabilization area [REDACTED], Dewater/Packout area [REDACTED], Administration building [REDACTED] and the supporting areas/processes required to support the new Nitrocellulose Facility at the RFAAP. The Cutter/Warehouse [REDACTED] is being built under a separate contract, but this SOW requires installation of process equipment and related mechanical, piping and E&I systems in this building. The major components of this SOW include:

1. Finish Grading, Paving, and Landscaping (including maintenance of existing roadways and access to the construction areas)
2. Administration building foundation, diesel generator foundation, NOx pad, Chiller Pad, miscellaneous concrete, foundation support, equipment pads, elevated slabs, tank supports, concrete steps, retaining walls, ramps, dust compactor pad, splash pads,



- concrete paving, barrier curb, man door pads.
3. Foundation Mats are being furnished by others for the tank farm, nitration, stabilization and dewatering/packout buildings and south side piperack footings.
  4. Placement of the administration building foundation.
  5. Site Utilities not included in mat foundation contract.
  6. Structural Steel
  7. Metal Buildings including all roofing, siding, louvers, doors. (The Cutter/Warehouse building is being furnished by others)
  8. Interior and Exterior Finishes
  9. HVAC System
  10. Plumbing (except underslab piping and stub-ups for Tank Farm, Nitration, Stabilization and Dewatering/Packout buildings that are part of the Mat Foundation contract)
  11. Fire Protection Systems (except underslab piping and stub-ups for Tank Farm, Nitration, Stabilization and Dewatering/Packout buildings that are part of the Mat Foundation contract )
  12. Communication Equipment
  13. Piping Systems
  14. Electrical Systems
  15. Control Systems installation and wiring
  16. Process Equipment installation
  17. Utilities (air, water, steam, condensate and other systems according to the P&ID's)

This SOW excludes the following items:

1. Site Preparation. Preliminary Site Preparation has been completed, except at the Administration Building [REDACTED] and storm water detention basin which will be the Subcontractor's responsibility to complete.
2. Installation of Compacted Aggregate Piers (CAPs)
3. Concrete Mat Foundations for the nitration, stabilization and dewatering/packout buildings and auxiliary foundations
4. Underground Electrical Ductbanks except for the Administration building
5. The Cutter/Warehouse Building (SOW includes installation of process equipment, piping and I&C systems)

#### 1.1. SECTION ORGANIZATION

This Section is organized under 6 major "paragraphs".

- 1) Paragraph 1 is intended to define the project objectives
- 2) Paragraph 2 describes the scope of the project.
- 3) Paragraph 3 provides the functional, operational and facility specific design criteria for the specific facility type(s) included in this contract or task order.
- 4) Paragraph 4 lists applicable industry and government design criteria, generally applicable to all facility types, unless otherwise indicated in the Section. It is not intended to be all-inclusive. Other industry and government standards may also be used, where necessary to produce professional designs, unless they conflict with those listed.
- 5) Paragraph 5 contains Army Standard Design Criteria, generally applicable to all facility types, unless otherwise indicated in the Section.
- 6) Paragraph 6 contains installation and project specific criteria supplementing the other 5 paragraphs.

## 1.2. DEFINITION OF PARTIES

For the purposes of this contract, the parties involved are as follows:

- Contractor – BAE Systems
- Subcontractor – EPC Design Build contractor to which the design and construction of the NC Facility is awarded by BAE Systems
- Second Tier Subcontractor – Any contractor performing work (design, construction, testing or other EPC activities) under contract to the Subcontractor.
- Purchaser – BAE Systems
- Owner – U.S. Government
- Engineer – A professional Engineer working under the Subcontractor or a Second tier subcontractor responsible for the engineering or design of the new NC Facility. Includes PE-stamped drawings, specifications, procedures, sketches, schematics and other constructability aides such as rigging plans and evaluations to make safe in-process constructions.

## 2.0 SCOPE

2.1 This project will design, procure, and construct the new NC facility. The major areas include NC Area Acid Tank Farm [REDACTED], Cutter/Warehouse area [REDACTED] a Nitration area [REDACTED], Stabilization area [REDACTED], Dewater/Packout area [REDACTED], Administration building [REDACTED]. The design and construction of certain areas for the new NC facility is ongoing; these areas include the Cutter Warehouse Building, foundation mats and underground utilities for the rest of the process areas described above. The pipe rack located along the [REDACTED] of the site has been installed. The preliminary design of for the new NC facility has been developed and is included in this SOW. This Conceptual Design was developed by Lauren Engineers & Constructors (LEC) based on the Technical Design Package (TDP) prepared by the U.S. Army. Drawings, specifications, and other technical documents provided in the appendices of this SOW were prepared by LEC and amended by BAE Systems.

2.2 The drawings, specifications, and technical documents provided in APPENDIX G are amended in this Statement of Work (SOW) by BAE systems to show additional requirements and/or corrections. These drawings are provided for reference only. The Subcontractor shall prepare their own drawings to be used for design review submittals, construction and as Record Drawings. Native CADD files for these drawings are available to the Subcontractor.

2.3 Although excluded from this SOW, supplemental civil and, Cutter Warehouse building design drawings are provided in APPENDIX G with the goal of minimizing the interface risk between the work underway and the new components. Concrete mat foundation design drawings will be provided when they are complete The Subcontractor shall be responsible for review of these drawings as part of the NC Facility Design and coordination with BAE systems to identify and resolve potential interface risks.

2.4 Specifications provided in APPENDIX G represent the minimum requirements. The Subcontractor shall prepare their own construction specifications to be used for design review submittals and construction. Native Word files for these specifications will be made available to the Subcontractor. Construction specifications should be prepared using Unified Facilities Guide Specifications (UFGS), AIA Master Spec or other specification systems as

approved by BAE Systems.

2.5 It is incumbent upon the Subcontractor to review the documents submitted and to perform their own analysis, including Hazard and Operability Studies and Life Safety Code Analysis. The Subcontractor shall be solely responsible for the design and all safety reviews and safety submittals with all required state and federal agencies. These reviews and submittals include those listed in the Acronyms, Codes, Regulations and Standards section of this RFP. A partial Preliminary Hazard Analysis and a Preliminary Code Analysis has been performed on the process and building described here within this RFP. These documents can be found in APPENDIX H and D respectively. The documents provided indicate design and safety consideration many of which have been addressed within the preliminary design outlined in this RFP. Subcontractor is responsible for conducting and reporting on the final PHA and HAZOP reviews. BAE Systems will be participatory in all reviews and will approve the Engineer's report upon agreement with resultant action items.

2.6 BAE Systems has already purchased process equipment as indicated in Appendix F. It is the responsibility of the Subcontractor to ensure that the equipment they purchase meets all applicable US codes and standards. BAE Systems purchased process equipment will arrive on site in [REDACTED] and be stored in the [REDACTED] until ready for installation.

2.7 Subcontractor will be responsible to validate and complete all PFD's and P&ID's. PFDs and P&IDs are currently red lined to reflect all preliminary PHA action items and any other design changes that have occurred up to the time of this solicitation.

2.8 BAE Systems will write all operation manuals and train their staff accordingly. Subcontractor responsibilities include developing design basis documents to support BAE Systems operation manuals development and providing vendor supplied maintenance and operation manuals for subcontractor purchased equipment.

### 3.0 GENERAL REQUIREMENTS

3.1 Requirements stated in this contract are minimums. Innovative, creative, and life cycle cost effective solutions, which meet or exceed these requirements are encouraged. Further, the bidder is encouraged to seek solutions that will expedite construction and reduce cost. Materials and methods should reflect this by choosing the most economical type of construction allowed by code and specifications for this project.

3.2 The process shall have a [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] Develop the project site for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

3.3 Comply with the BAE Systems welding and fastener specifications and employ customary engineering practices to ensure proper design for energetic materials processing. Such considerations include, but are not limited to, practices to prevent metal parts (bolts, nuts, mixer shafts, impellers, etc.) from coming loose and entering the process medium and ensuring full penetration, continuous welds in process piping. Design of moving parts to prevent metal-

to-metal contact that could initiate the energetic materials is also required. All tanks and pipe lines that may contain NC must be capable of being completely drained and/or flushed to prevent build up of materials and cross contamination of different types of NC. Hollow tube construction is prohibited.

3.4 Materials of construction will be selected such that they are suitable for process conditions, and will vary throughout the process. Where dissimilar materials meet in piping systems, appropriate dielectric unions shall be used to prevent galvanic corrosion. Supports for vessels, piping and cabling, as well as instrument housings and instrument supports corrosive environments will require appropriate design for long-term durability.

3.5 In contrast to the current NC production process, the new process is conducted in a closed system with nitration, stabilization and blending taking place entirely within the closed process equipment. As such, the process is not conducive to accumulation of NC within the facility that can dry out and become a hazard. However, process areas are subject to the accumulation of NC outside the equipment. This NC may dry out, and the Subcontractor shall ensure that Nitration, Stabilization and Dewatering/Packout areas support periodic area water wash downs with a 2.5 inch firehose.

3.6 The facility will be designed to control internal and external noise. Noise shall be used as a factor in selecting equipment and for design of air intake and exhaust systems. The noise levels of the new NC Facility shall be based on vendor furnished data. Where practical, internal plant noise shall be controlled such that Speech Interference Levels (The arithmetic average of the octave band sound pressure levels in the 500-, 1000-, 2000-, and 4000 Hz octave bands) allow verbal communications to be intelligible by a raised voice and for the emergency address system to be heard adjacent to machinery. Around motors and fans, SIL levels shall permit communication by a loud voice. SIL levels shall not exceed the following guidelines:

Distance in Feet Between Talker and Listener	Raised Voice (dB)	Loud Voice (dB)
1	73	85
3	64	70
5	59	65

The noise level inside the plant shall be controlled so that worker exposure complies with the noise regulations of the Occupational Safety and Health Administration (OSHA) Title 29 CFR 1910.95. Specifically, noise in plant areas where workers spend their time shall not exceed an A-weighted level of 85 dB (A). The noise level in areas such as the CCR and Administration building, shall be limited to a design goal of 60 dB (A). Outdoor noise associated with normal operation of the plant shall be controlled so that the resulting increase in broad band noise level at the road 3 yards from the building shall not exceed 70 dB. Vents shall be provided with silencers to achieve these sound levels.

### 3.7. ORDER OF PRECEDENCE

In the case of a difference between this SOW and the documents referenced within the Subcontractor shall contact BAE Systems for resolution.

In case of discrepancy either in the specifications or drawings, the matter shall be promptly submitted in writing to BAE Systems, who shall promptly make a determination in writing. Any adjustment by the Subcontractor without such a determination shall be at the Subcontractor's own risk and expense.



#### **4.0 APPLICABLE CRITERIA**

4.1 Unless a specific document version or date is indicated, use criteria from the most current references, including any applicable addenda, unless otherwise stated in the contract or task order, as of the date of the Subcontractor's latest accepted proposal or date of issue of the contract or task order solicitation, whichever is later. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract or task order. Applicable design and construction criteria references are listed in APPENDIX A: GENERAL TECHNICAL REQUIREMENTS.

##### **4.2 OTHER APPLICABLE CRITERIA**

The Administration building, process control room, elevator corridor and public access areas are required to meet Americans with Disabilities (ADA) requirements. Provide barrier free design in accordance with the requirements of the Deputy Secretary of Defense (DEPSECDEF) Memorandum "Access for People with Disabilities" dated 31 October 2008. The memorandum updates the DoD standards for making facilities accessible to people with disabilities. The US Access Board issued an update of the accessibility guidelines which the DEPSECDEF Memorandum implements with military unique requirements specified in the memorandum attachment. The new DoD, "ABA (Architectural Barriers Act) Accessibility Standard" and the DEPSECDEF Memorandum are located at [http://www.access\\_board.gov/ada%2Daba/aba\\_standards-dod.cfm](http://www.access_board.gov/ada%2Daba/aba_standards-dod.cfm).

##### **4.3 BAE SYSTEMS SPECIFIC STANDARDS**

4.3.1 RFAAP Welding Requirements Class "A", "B", "C" & "F" (BAE Systems Drawing 11717), Class B welds are required for NC process areas.

4.3.2 RFAAP Safety Wire Applications BAE Systems Drawing 09465

#### **5.0 GENERAL TECHNICAL REQUIREMENTS**

This section contains technical requirements with general applicability to Army facilities.  
See also  
Paragraph 3 for facility type-specific operational, functional and technical requirements.

##### **5.1. SITE DESCRIPTION AND LAYOUT**

[REDACTED]

###### **5.1.1 EXISTING CONDITIONS**

The existing site conditions represented on the drawings in APPENDIX C are based on a site survey conducted in August 2012. A second topographic survey was completed January 28, 2015 and has also been provided in APPENDIX C.

To date the following construction work packages have been or are being executed:

- An initial site work package has been executed for implementation of the Storm Water Pollution Prevention Plan (SWPPP), installation of the storm sewer system, installation of the acid sewer system, at grade and underground utilities demolition, and site rough grading. This work package has been completed.
- The Western Pipe Rack and associated plant steam piping has been completed.
- A Cutter/Warehouse work package has been executed for the construction of the Cutter/Warehouse [REDACTED] Building (without process equipment). This work package is ongoing and is expected to continue through [REDACTED]. The work area for this project is located immediately [REDACTED]
- A work package has been executed for the installation of deep compacted aggregate piers (CAPs) at the Nitration Building [REDACTED] Stabilization Building [REDACTED], Dewatering/Packout Building [REDACTED], and Administration Building [REDACTED]. This work package is ongoing and is expected to continue through [REDACTED]
- The foundation mats, including design, for the Nitration Building [REDACTED] Stabilization Building [REDACTED] Dewater/Packout Building [REDACTED] and NC Area Acid Tank Farm [REDACTED] is underway. This work in progress includes underground piping systems design, supply and installation is being performed by another subcontractor's work package.

The Subcontractor will be required to coordinate construction activities with other subcontractors and with BAE Systems and make reasonable accommodations for other work activities on the NC site.

#### 5.1.2 Concurrent Site Activities

During the period of performance of this subcontract, the following work will be ongoing:

- Mat Foundation installation for the Acid Tank Farm [REDACTED] Nitration Building [REDACTED] Stabilization Building [REDACTED] and Dewatering/Packout Building [REDACTED]. All Portions of this work will occur during the period of performance of this subcontract. This effort will commence in [REDACTED] and is scheduled to complete in [REDACTED]
- Normal activities for continuing the day to day operations for the RFAAP facility.
- [REDACTED] along the south edge of the site will be decontaminated during in [REDACTED]. This involves the removal of machinery and piping from the building for transport to a decontamination facility. Following decontamination the building will be demolished. This work is outside the scope of this contract.
- [REDACTED] will be converted into a maintenance facility for the NC plant. This work is outside the scope of this contract.
- The rail tracks [REDACTED] of the Cutter/Warehouse will be refurbished under a separate contract.

#### 5.1.3 Additional BAE Systems Efforts in Progress

- BAE Systems is in the process of designing and procuring a NC packout system. This system will be provided with the rest of the BAE Systems provided process equipment, (reference APPENDIX F). Drawings for these systems, along with the rest of the process machinery will be provided.
- An existing, modern dewatering/packout facility is located in [REDACTED] about [REDACTED] from the new NC facility. Existing P&IDs reflect connection points to allow slurry to be piped to this existing facility. The subcontractor will be responsible for

constructing a slurry line to the western pipe rack from these connection points. BAE Systems will award a separate contract to build a slurry pipe from the western pipe rack to the [REDACTED] later in the construction process.

#### 5.1.4 Construction Sequence

The Subcontractor shall sequence construction to complete work so that water trials can begin as soon as practical. The subcontractor is responsible for completion of water trials; BAE Systems will perform acid trials.

5.2 PERMITS: Other than the General VPDES Permit For Discharges of Storm water from Construction Activities, there are no off-site local, state, or federal permits required for this project. BAE Systems has already obtained this permit. RFAAP permits (Area Entry, Hot Work, Confined Space) are required where applicable but there are no associated fees.

5.3 BATTERY LIMITS: The following utilities will be available at the battery limits: acid transfer piping, water (fire, reverse osmosis, potable and filtered), high pressure steam [REDACTED] low pressure steam [REDACTED] sanitary sewer, acid sewer, compressed air and electrical power. Additional requirements for these utilities are identified in the Appendices. Also required for the production of NC are the following acids: [REDACTED]

[REDACTED] These acids will be stored in the [REDACTED]. The excess acids from the process will be pumped to the existing nitric acid concentrator/sulfuric acid concentrator (NAC/SAC) facility for recovery. In addition, the NAC/SAC facility will supply all the acid requirements of the NC facility. Utilities outside the battery limits of the site are by others.

Natural Gas is available is within [REDACTED] of the battery limit.

5.3.1. The adjacent nitric acid concentration/sulfuric acid conversion (NAC/SAC) plant will provide [REDACTED] for use in the NC plant. Oleum will also be supplied from off site. The NC facility will provide on-site storage of a one-day supply of process acids for use in the NC process. These tanks will be filled from the existing RFAAP acid area tanks and from the tanks located at the NAC/SAC plant.

5.3.2. Utilities within the battery limits of the site will be the responsibility of the Subcontractor.

Provided with this RFP in APPENDIX G, Section 4 are estimated utility consumptions based upon the Mass and Energy Balances. The Subcontractor shall confirm all utilities consumed and finalize the design, including specification and P&IDs, based upon the information presented within this RFP.

5.4 WMSD: The process, job tasks and materials shall be designed to reduce or eliminate work-related musculoskeletal (WMSD) injuries and risk factors or stressors in the workplace. The facility shall be designed and finished with sufficient infrastructure to provide a safe and ergonomic work environment for the operators. The design shall follow OSHA guidelines and established industry best practices.

5.5 SUSTAINABILITY: The design and construction shall incorporate sustainable design strategies and features to the fullest extent possible BAE System requirements. Subcontractor will integrate sustainable strategies and features into the design to minimize the energy

consumption of the facilities, conserve resources, minimize adverse effects to the environment and improve occupant productivity, health and comfort to reduce the total cost of ownership of the project using a whole-building, life-cycle approach.

## 6.0 PROJECT SPECIFIC Requirements

### A. Structural (Concrete and Steel) Engineering and Design , Procurement and Construction

Subcontractor is responsible for the following Structural engineering and design functions:

- Structural Code Review and Structural Calculations, Seismic Analysis and Structural Design Criteria, Structural Framing Plans, Details and Sections detailed drawings, including the following structural design loads shall be shown on drawing plans (ground floor, elevated concrete, steel floor and similar)
- Area live loads and dead loads in PSF
- Moving concentrated loads when applicable by dimensioned diagram (include wheel contact area and tire type) with load tabulation in kips and indication of impact factor; Monorail track capacity in pounds
- Bridge crane and track capacity in pounds
- Defined utility corridors
- Structural Layout, Framing Plans, Details and Sections, including elevated slabs and pipe racks. Complete detailed drawings, including the following elements: All roof plan drawings shall include a plan sketch showing the required uplift forces to be resisted by the fastening system. The fastening selection shall be determined by the deck supplier or detailer. All roof plan drawings shall include a statement specifying the required shear capacity for diaphragm action
- Structural Foundation Plans, Sections and Details and Structural Floor Plan Sections and Details for equipment pads (housekeeping pads) , pipe rack foundations, retaining walls and support steel baseplates (complete detailed drawings all foundation plans shall indicate the allowable soil parameters used for analysis and design), including net bearing pressure, lateral resistance to sliding, pile capacity, and similar as required.
  - Diesel generator foundations. Floor plans/layout shall indicate location of control/expansion joints, joint details, floor slopes, room segregation with Zone criteria and limits of special coatings
  - Includes elevated slab details (including Q-decking) and grating details with continuity requirements defined for fastening
  - Includes elevated slabs and masonry wall plans and sections.
- Process and Maintenance Bridge Cranes, Monorails and Hoists (Complete Detailed Drawings with design capacities indicated)
- Equipment and support baseplate grouting
- Structural design criteria and 3D SmartPlant modeling (MAT foundations by others). Validate foundation mats adequacy
- Prepare Procurement Requisitions for Materials of Construction, including fabrications.

#### A.1 Specifics for Concrete Placement Works

Subcontractor is responsible for design, supply and placement of concrete, including excavating, placement of gravel, setting formworks, doweling, rebar and embed setting, placing and finishing concrete and backfill placements, grading and grouting. Concrete placements include Headwalls, Retaining Walls, Concrete Drainage Sump Basin and Trenches



(includes all concrete placements work and metal liners), Power and Lighting Poles (Standards) Concrete Bases, Manholes, Cleanouts, Bollards, , Roadway, Driveway, Ramps and Walkways (Sidewalk), equipment pads/housekeeping pads, foundations and pads for stairways, man door pads (stoops), concrete filled treads, dumpster pads, , masonry, refractory, embeds, elevated slabs, contraction/construction joints, vapor barriers, flexible and flat water stops, cutoff walls, culverts (including corrugated and reinforced concrete pipe) and steps/stairways.

## A.2 Concrete Placement Works Specifications

Subcontractor will develop specifications for the concrete works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specifications references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents

UFGS 03 01 30.71	Concrete Rehabilitation
UFGS 03 11 13.00 10	Structural Cast In-Place Concrete Forming
UFGS 03 11 19.00 10	Insulating Concrete Forming
UFGS 03 15 00.00 10	Concrete Accessories
UFGS 03 20 00.00 10	Concrete Reinforcing
UFGS 03 23 00	Steel Stressing Tendons and Accessories for Pre-Stressed Concrete
UFGS 03 30 00.00 10	Cast-In-Place Concrete
UFGS 03 30 00	Cast In-Place Concrete
UFGS 03 30 53	Miscellaneous Cast-In Place Concrete
UFGS 03 31 01.00 10	Cast-In-Place Structural Concrete for Civil Works
UFGS 03 33 00	Cast-In Place Architectural Concrete
UFGS 03 35 00.00 10	Concrete Finishing
UFGS 03 37 00	Preplaced Aggregate Concrete
UFGS 03 37 13	Shotcrete
UFGS 03 37 23	Roller-Compacted Concrete for Mass Concrete Construction
UFGS 03 37 29	Concrete for Concrete Cutoff Walls
UFGS 03 39 00.00 10	Concrete Curing
UFGS 03 40 00.00 10	Plant Precast Concrete Products for Below Grade Construction
UFGS 03 41 16.08	Precast Concrete Slabs
UFGS 03 41 33	Precast Structural Pre-Tensioned Concrete
UFGS 03 45 00	Precast Architectural
UFGS 03 45 33	Precast [Prestressed] Structural Concrete
UFGS 03 47 13	Tilt-Up Concrete
UFGS 03 51 01	Precast Roof Decks
UFGS 03 52 00	Lightweight Concrete Roof Insulation
UFGS 03 52 16.19	Lightweight Insulation Concrete Overlay
UFGS 03 52 16	Lightweight Insulation Concrete
UFGS 03 53 14.00 20	Light Reflective Nonferrous Metallic Aggregate Floor System
UFGS 03 55 16	Gypsum Concrete Floor Planks
UFGS 03 62 16	Metallic Non-Shrink Grouting
UFGS 03 70 00	Mass Concrete

Masonry specifications include:

UFGS 04 20 00	Masonry
UFGS 04 21 13.13	Nonbearing Masonry Veneer/Steel Stud Walls

### A.3 Additional Concrete Placement Requirements

#### A.3.a Expansion Contraction and Construction Joints in Concrete

- Premolded expansion joint filler strips shall conform to ASTM D 1751 or ASTM D 1752, Type I or resin impregnated fiberboard conforming to the physical requirements of ASTM D 1752.
- Field molded sealants and primer shall conform to ASTM C 920, Type M, Grade NS or P, Class 25
- Bond breaker material shall be polyethylene tape, coated paper, metal foil or similar type materials
- Back-up material shall be compressible, nonshrink, nonreactive with sealant, and nonabsorptive material type such as extruded butyl or polychloroprene foam rubber.
- Compression seals shall conform to ASTM D 2628; lubricant for installation shall conform to ASTM D 2835
- Provide chemical resistant water stops at the Acid Tank Farm, Nitration Building, and locations indicated on Drawings. Chemical resistant waterstops shall be either thermoplastic elastomeric rubber (TPER) or Type 316 stainless steel suitable for severe chemical and high service temperature environments as determined by specific testing for the application.
- For areas not requiring acid resistance, rubber water stops shall conform to COE CRD-C 513. Polyvinylchloride water stops shall conform to COE CRD-C 572.
- Flexible Metal Water stops: Copper water stops shall conform to ASTM B 152/B 152M, temper soft annealed, and 20-ounce weight sheet. Stainless steel water stops shall conform to ASTM A 167; Type 304L, No.1 Finish or equivalent, annealed, 0.0375-inch (20 Gauge) strip.
- Flat Steel Water stops: Flat steel water stops shall conform to ASTM A 109/A 109M, temper No. 2, No. 2 edge, No. 1 Finish or ASTM A 1011/A 1011M, Grade D.

#### A.3.b Concrete Placements for Cutoff Walls

- Portland cement shall conform to ASTM C 150.
- Fine and coarse aggregates proposed for use in concrete shall be tested and evaluated for alkali aggregate reactivity in accordance with ASTM C 1260.
- Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, or alkali, except that non-potable water may be used if it meets the requirements of COE CRD-C 400

#### A.3.c Excavation and Fill

- Fill material shall be in accordance with geotechnical engineer's recommendations.
- Fill is to be placed at a maximum of 8 inch lifts.

**A.3.d Heavy Duty Concrete Pavement Less Than 10000 Cubic Yards**

- Portland cement shall conform to ASTM C 150.
- Fly ash shall conform to ASTM C 618, Class F, including the optional requirements for drying shrinkage, uniformity, and effectiveness in controlling Alkali-Silica reaction and has a loss on ignition not exceeding 6 percent. Ensure class F fly ash has a Calcium Oxide (CaO) content of less than 8 percent."
- Natural pozzolan shall be raw or calcined and conform to ASTM C 618, Class N, including the optional requirements for drying shrinkage, uniformity, and effectiveness in controlling Alkali-Silica reaction and shall have a loss on ignition not exceeding 6 percent.
- Ground Granulated Blast-Furnace Slag shall conform to ASTM C 989, Grade 100 or Grade 120.
- The nominal maximum size of the coarse aggregate is to be 1.5 inches. When the nominal maximum coarse size is greater than 1 inch, grade the coarse aggregates and furnish in two size groups meeting the individual grading requirements of ASTM C 33/C 33M, Size No. 4 1.5 to 0.75 inches and Size No. 67 0.75 inches to No. 4).
- Water for mixing and curing must be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, or alkali, except that non-potable water may be used if it meets the requirements of ASTM C 94/C 94M.
- Expansion joint filler must be 3/4 inch thick, and must be furnished in a single full depth piece.
- Slip joint material must be 1/4 inch thick expansion joint filler.
- All reinforcement is to be free from loose, flaky rust, loose scale, oil, grease, mud, or other coatings that might reduce the bond with concrete.

**A.4 Civil Works**

Subcontractor is responsible for engineering, design, supply and erection of civil and earthworks, including final grading plans, utility plans and details as-builds, storm water and sanitary calculations, site plans and details, site erosion and sediment control plan, details and calculations, master site plan, right-of-way improvement plan, pavement and sectional drawings, including sidewalks, roadways, truck loading docks, driveways, car parks, outside stairways, retaining walls, ramp ways and similar elements of related civil works. Civil works includes developing civil design criteria document, prepare procurement requisitions for Materials of Construction culverts, storm inlet, landscape seeding and plantings, pavement markings, guardrails, chain link fencing, asphalt (including standard and heavy, subbase and base course, tack and prime coats and surface sealants and sawcuts on existing). Civil works also includes providing a comprehensive narrative, complete compliance forms, calculations and specifications required to meet Storm Water Management requirements with metering. Develop multi-discipline detailed engineering and design drawings, Material Take Offs (MTOs) and related documentation for construction/installations.

Subcontractor will establish a minimum of three (3) permanent monuments at the site as a basis for determining dimensional information for design and constructions. Coordinate with BAE Systems for the locations for those monuments.

Subcontractor will follow UFC-3-210-10 to comply with low impact development (LID) standards.

**A.5 Civil Works Specifications**

Subcontractor will develop specifications for the civil works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents

UFGS 31 00 00	Earthwork
UFGS 31 05 19	Geotextile
UFGS 31 05 20	Geosynthetic Drainage Layer
UFGS 31 05 21	Geogrid Soil Reinforcement
UFGS 31 05 22	Geotextiles Used as Filters
UFGS 31 10 00	Clearing for Civil Works
UFGS 31 11 00	Clearing and Grubbing
UFGS 31 21 13	Radon Mitigation
UFGS 31 23 00.00 20	Excavation and Fill
UFGS 31 31 16.13	Chemical Termite Control
UFGS 31 31 16.19	Mesh Termite Control Barrier System
UFGS 31 31 16.20	Basaltic Termite Barrier
UFGS 31 32 11	Soil Surface Erosion Control
UFGS 31 32 23	Foundation Drilling and Grouting
UFGS 31 36 00	Wire Mesh Gabions and Mattresses
UFGS 31 41 16	Metal Sheet Piling
UFGS 31 60 0	Foundation Preparation
UFGS 31 62 13.13	Cast In Place Concrete Piles
UFGS 31 62 13.20	Precast/Prestressed Concrete Piles
UFGS 31 62 13.24	Concrete Cylinder Piles
UFGS 31 62 13.26	Pressure Injected Footings
UFGS 31 62 16.16	Steel H Piles
UFGS 31 62 23.13	Cast In Place Concrete Piles, Steel Casing
UFGS 31 63 16	Auger Cast Grout Piles
UFGS 31 63 26	Drilled Caissons
UFGS 31 63 29	Drilled Concrete Piers and Shafts
UFGS 31 68 13	Soil and Rock Anchors, Division 32 Exterior Improvements
UFGS 32 01 13.00 20	Emulsified Asphalt Seal Coats [With] [Without] Aggregate
UFGS 32 01 13	Bituminous Seal and Fog Coats
UFGS 32 01 16.17	Cold Milling of Bituminous Pavements
UFGS 32 01 17.16	Sealing of Cracks in Bituminous Pavements
UFGS 32 01 17.62	Stress Absorbing Membrane Interlayer
UFGS 32 01 17	Cold Mix Recycling
UFGS 32 01 19.61	Resealing of Joints in Rigid Pavement
UFGS 32 01 19	Field Molded Sealants for Sealing Joints in Rigid Pavements
UFGS 32 01 22	Bituminous Rejuvenation
UFGS 32 01 24	Hot In Place Recycling of Bituminous Pavements
UFGS 32 01 25	Heater Scarifying of Bituminous Pavements
UFGS 32 01 29.61	Partial Depth Patching of Rigid Paving
UFGS 32 01 29.62	Slabjacking Rigid Pavements
UFGS 32 05 33	Landscape Establishment



Section 01 10 00

UFGS 32 10 00	[Pervious] Bituminous Concrete Pavement
UFGS 32 11 10	Drainage Layer
UFGS 32 11 16.13	Sand-Clay [Base] [Subbase] Course
UFGS 32 11 16.16	[Base Course for Rigid] [and Subbase Course for Flexible] [Subbase Course for Pervious] Paving
UFGS 32 11 16	[Base Course for Rigid] [and Subbases for Flexible]
UFGS 32 11 23	Aggregate and/or Graded-Crushed Aggregate Base Course
UFGS 32 11 24	Graded Crushed Aggregate Base Course for [Pervious] [Flexible] Pavement
UFGS 32 11 26.16	Bituminous Concrete Base Course
UFGS 32 11 26	Bituminous Base Course
UFGS 32 11 27	Bituminous Stabilized Base Course, Subbase, or Subgrade
UFGS 32 11 34	Portland Cement Stabilized Base or Subbase Course
UFGS 32 11 36.13	Lean Concrete Base Course
UFGS 32 12 10	Bituminous Tack and Prime Coats
UFGS 32 12 11	Bituminous Surface Treatment
UFGS 32 12 16	Hot-Mix Asphalt (HMA) for Roads
UFGS 32 12 17	Hot Mix Bituminous Pavement
UFGS 32 12 18	Resin Modified Pavement Surfacing Material
UFGS 32 12 19	Bituminous Binder and Wearing Courses (Central Plant Cold-Mix)
UFGS 32 12 21	Bituminous Road-Mix Surface Course
UFGS 32 12 36.19	Coal Tar Seal Coat with Un-vulcanized Rubber
UFGS 32 12 37	Fuel-Resistant (Coal Tar) Sealer
UFGS 32 13 13.06	Portland Cement Concrete Pavement for Roads and Site Facilities
UFGS 32 13 15.20	Concrete Pavement for Containment Dikes
UFGS 32 13 16.16	Roller Compacted Concrete (RCC) Pavement
UFGS 32 13 43	Pervious Concrete Paving
UFGS 32 13 73	Compression Joint Seals for Concrete Pavements
UFGS 32 15 00	Aggregate Surface Course
UFGS 32 16 13	Concrete Sidewalks and Curbs and Gutters
UFGS 32 16 15	Concrete Block Pavements
UFGS 32 17 23.00 20	Pavement Markings
UFGS 32 17 24.00 10	Pavement Markings
UFGS 32 18 16.13	Playground Protective Surfacing
UFGS 32 31 13.53	High-Security Chain Link Fences and Gates
UFGS 32 31 13	Chain Link Fences and Gates
UFGS 32 31 26	Wire Fences and Gates
UFGS 32 32 23	Segmental Concrete Block Retaining Wall
UFGS 32 84 23	Underground Sprinkler Systems
UFGS 32 84 24	Irrigation Sprinkler Systems
UFGS 32 92 19	Seeding
UFGS 32 92 23	Sodding
UFGS 32 92 26	Sprigging
UFGS 32 93 00	Exterior Plants
UFGS 32 96 00	Transplanting Exterior Plants
UFC3-250-01FA	Pavement Design

#### **A.6 Additional Civil Placements Requirements**

A.6.a Maximum grade slope to be provided is 1 vertical to 2 horizontal with flatter surfaces preferred for maintenance purposes.

A.6.b Minimum slopes to be provided are 1.00 percent in paved areas, 2.00 percent in unpaved areas and 0.20 percent in paved channels. Grades may require the use of concrete retaining walls to provide the access needed for various areas of the site. Walls shall extend to one foot minimum above grade and provide adequate fall protection for both pedestrians and vehicles as required by code.

A.6.c Provide pavement to allow for vehicular movement around and through the site in accordance with the area site plan. Concrete pavement shall be provided in areas that are subject to turning movements of large vehicles and in areas subject to large static vehicle loads. All other areas that are subject to vehicular traffic will receive asphalt pavement. Refer to the Site Plans in APPENDIX C for the areas to be paved and for the location of various pavement types. Subcontractor will modify the Site Plans to incorporate a driveway around the outside perimeter on the southside of the Process Buildings. This will require adjusting the proposed stairway, storm structures and the retaining wall south of the Nitration Building. Additionally, an at-grade single truckbay is required on the south side of the packout building.

- Final pavement design shall be based upon the information provided by BAE Systems geotechnical engineer's evaluation and shall meet UFC 3-250-01FA. Minimum pavement sections in vehicular areas are to be three (3) inches of asphalt on eight (8) inches of subbase or six (6) inches of concrete (4,000 psi) on four (4) inches dense aggregate base.
- Provide parking in accordance with area site plan for Privately Owned Vehicles (POV)/Government Owned Vehicles (GOV) including ADA spaces, one of which is to be van accessible in accordance with code requirements. Parking spaces shall be designed in accordance with UFC 3-210-02 and shall be located in accordance with UFC 4-010-01. "Provide concrete ADA compliant pedestrian access routes to and from the parking areas. During normal operations, pedestrian and vehicular access routes shall not mix external of the buildings. Concrete walks shall have a minimum thickness of 4 inches and shall have reinforcement of welded wire fabric as a minimum and shall conform to the UFC."

#### **A.6.d Excavation and Fill**

- Fill material shall be in accordance with geotechnical engineer's recommendations.
- Fill is to be placed at a maximum of 8-inch lifts.
- Rip-Rap pads to conform to VDOT standards for construction.

#### **A.6.e Field Molded Sealants for Sealing Joints in Rigid Pavements**

- Conform to the VDOT standards for construction.
- When primers are recommended by the manufacturer of the sealant, use them in accordance with the recommendation of the manufacturer.
- Backup material shall be a compressible, non-shrinking, non-staining, non-

absorbing material, nonreactive with the joint sealant.

- Bond breaking tape or separating material shall be a flexible, non shrinkable, non absorbing, non-staining, and non-reacting adhesive backed tape.

A.6.f Base Course for Rigid and Subbases for Flexible Paving

- Conform to the VDOT standards for construction.
- Aggregates shall consist of crushed stone or slag, gravel, shell, sand, or other sound, durable, approved materials processed and blended or naturally combined.
- Aggregates are to be durable and sound, free from lumps and balls of clay, organic matter, objectionable coatings, and other foreign material.

A.6.g Bituminous Base Course

- Conform to the VDOT standards for construction.
- Coarse aggregate shall be crushed gravel and shall have at least 75 percent by weight of pieces having two or more fractured faces.
- Fine aggregate shall not be less than two thirds non-plastic material passing 200 mesh sieves to meet requirements of ASTM D 242 when tested in accordance with ASTM D 546.

A.6.h Bituminous Tack and Prime Coats shall conform to AASHTO standards

A.6.i Bituminous Surface Treatment

- Conform to the VDOT standards for construction.
- Aggregate shall consist of crushed stone, crushed gravel or crushed slag of such nature that a thorough coating of bituminous material, used in the work, will not strip off upon contact with water.
- Crushed stone shall consist of clean, sound, durable particles, free of soft or disintegrated pieces, dust, or foreign matter.
- Crushed gravel shall consist of clean, sound, durable particles, free of soft or disintegrated pieces or foreign matter. At least 90 percent by weight of the particles shall have at least two fractured faces.
- Crushed slag shall be an air cooled blast-furnace product having a dry weight of not less than 70 pcf, and consists of angular particles uniform in density and quality and free of dust and foreign matter. Determine the weight of a cubic foot of slag aggregate by ASTM C 29/C 29M.

A.6.j Hot Mix Bituminous Pavement

- Conform to the VDOT standards for construction.
- Coarse aggregates shall conform to ASTM D 692 and at least 75 percent by weight of aggregate retained on the 4.75 mm No. 4 sieve shall have two or more fractured faces.
- Fine aggregate shall be produced by crushing stone, slag or gravel that meets requirements for wear and soundness specified for coarse aggregate and shall conform to ASTM D 1073.
- Recycled hot mixed asphalt (HMA) shall consist of reclaimed asphalt pavement (RAP), coarse aggregate, fine aggregate, mineral filler and asphalt cement. The RAP shall be of a consistent gradation and asphalt content and

properties. When RAP is fed into the plant, the maximum RAP chunk size shall not exceed 2 inches. The recycled HMA mix shall be designed using procedures contained in AI MS-02. RAP should only be used for shoulder surface course mixes and for any intermediate courses. The amount of RAP shall be limited to 30 percent.

#### A.6.k Concrete Sidewalks, Curbs and Gutters

- Concrete shall have a minimum compressive strength of 3500 psi at 28 days. Maximum size of aggregate shall be 1-1/2 inches.
- The concrete slump shall be 2 inches plus or minus 1 inch where determined in accordance with ASTM C 143/C 143M.
- Reinforcement bars shall conform to ASTM A 615/A 615M. Wire mesh reinforcement shall conform to ASTM A 185/A 185M.
- Pavement Marking paint shall be homogeneous, easily stirred to smooth consistency, and shall show no hard settlement or other objectionable characteristics during a storage period of 6 months.
- Paints for roads, parking areas, and streets shall conform to FS TT P-1952, color as selected. Pavement marking paints shall comply with applicable UFC, state and local laws enacted to ensure compliance with Federal Clean Air Standards. Paint materials shall conform to the restrictions of the local Air Pollution Control District.
- High Security Chain Link Fences and Gates: provide gate with a K8 minimum rating.

#### A.7 Steel Erection

Subcontractor is responsible for design, supply and erection of steel Columns, Beams, Bracing, Truss, Plate, Grating, Bar Joists, pipe supports and Opening Framing, Ladders without Cages, Ladders with Cages, Platform Framing, Handrails, Edge and Toe Plates, Stair Stringers and Landings, Embedded Steel Items, Walk Bridges, Metal Decking (Q-Decking), Opening Framing Steel (Floor and Roof), Bent Plate and Stiffeners, Girts & Purlins, crickets, flashing, FRP Ladders, FRP Grating and FRP Tube Railings.

Note that equipment platforms are to be designed to be adequate for routine maintenance for all equipment/vessel/tanks, as required; (if occasional non-routine maintenance is anticipated then it does not predicate the need for a platform).

Handrails, support piping, instrument stands, ladders, stairs and other structural or architectural members shall not have tubular or other hollow forms to avoid accumulation of NC.

#### A.8 Steel Erection Work Specifications

Subcontractor will develop specifications for the steel works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 05 05 23.13 10	Ultrasonic Inspection of Weldments
UFGS 05 05 23.16	Structural Welding



UFGS 05 12 00	Structural Steel
UFGS 05 14 00.13	Welding Structural Aluminum Framing
UFGS 05 21 00	Steel Joist Framing
UFGS 05 30 00	Steel Decks
UFGS 05 40 00	Cold-Formed Metal Framing
UFGS 05 50 13	Miscellaneous Metal Fabrications
UFGS 05 50 14	Structural Metal Fabrications
UFGS 05 50 15	Civil Works Fabrications
UFGS 05 51 00	Metal Stairs
UFGS 05 51 33	Metal Ladders
UFGS 05 52 00	Metal Railings
UFGS 06 71 33	Fiberglass Reinforced Plastic (FRP) Ladders
UFGS 06 73 01	Fiberglass Reinforced Plastic (FRP) Grating
UFGS 06 82 14	Fiberglass Reinforced Plastic (FRP) Pipe and Tube Railings

A.8.a Precast and Pre-stressed Concrete Erection Bracing: Temporary bracing which may be necessary to maintain structural stability of the precast structure during construction shall be designed and installed in accordance with the Pre-stressed B289:C289Concrete Institute (PCI) Design Handbook.

A.8.b Pendant Operated Bridge Crane/Hoist Loads: General: All crane runways and supporting framework shall be designed to carry the maximum wheel loads for each and every crane that can be positioned to load the element. Wheel loads shall be considered along with the appropriate impact, lateral and longitudinal forces in accordance with ASCE 7-05, AISC 360, and UFC 3-320-07N.

A.8.b.1 Dead Loads: Dead load shall include the weight of the slings, shackles, load blocks, clevises, hooks, spreader bars, crane hooks and other special rigging devices that may be used.

A.8.b.2 Live Loads: Live loads shall include the weight of the piece being lifted, including attached platforms, ladders, piping and support clips as furnished with the equipment.

A.8.b.3 Impact Loads: Impact loads to account for the rapid acceleration or deceleration of the lifted load and the dead load shall be considered in the design

A.8.c Load Combinations (IBC): Each element of a building or structure, including equipment and pipe supports, shall be provided with sufficient strength to resist the most critical effects resulting from the load combinations. All load combinations shall be in accordance with IBC Section 1605 and UFC 3-310-02A Section 1-7.

Handrails, support piping, instrument stands, ladders, stairs and other structural or architectural members shall not have tubular or other hollow forms to avoid accumulation of NC.

A.8.c.1. Basins shall be accessible for maintenance purposes via permanently mounted, chemical resistant ladders.

A.8.c.2. Continuous handrail shall be installed along the leading edge of the basin.

Adequate access to all equipment for routine maintenance shall be installed

A.8.d. Dewatering Building Structure: All exposed ledges including framing, bracing, and connections shall be detailed to eliminate dust buildup through the use of 45 degree solid formed cants or other appropriate measures. Buildup of Nitrocellulose dust particles represents a hazard. No hollow spaces, including the use of hollow structural shapes, pipes, and tubes are allowed within the Dewatering building. All crevices, connections, joints, and similar building components shall be sealed to prevent the buildup of dust and shall accommodate building firehose washdown.

A.8.e. The ceiling of the deflaker/refiner room must be rated for 150 psf to accommodate future loading.

**B. Architectural Finishes Engineering, Design Construction**

Subcontractor is responsible for the following Architectural engineering and design functions:

- Architectural Plans, Sections and Elevations
- Architectural Exterior Elevations Overall and Enlarged
- Architectural Enlarged Plan for Laboratory and Administration Building
- Architectural Interior Elevations
- Architectural Exterior and Interior Details
- Architectural Rendering (Develop a rendering of the facility which identifies the color scheme and building and site features from various angles)
- Architectural Interior/Room Finish Schedule (A room data sheet will correspond to each room of the facility. Included in the sheets are: dimensions, technical requirements, furnishings, lighting, utilities, finish type and other elements like doors and glazing (windows), carpeting, floor tiles, coatings and painting requirements, roofing and siding requirements and all related elements for the project architectural design)
- Architectural Door/ Window / Louver/ Openings Schedule (Develop a list of door types, materials, sizes, and specific requirements)
- Interior / Exterior Signage Schedule
- Interior Color Schedule and Color Boards
- Architectural Construction Specifications, Outline specifications, General Arrangements (plans and elevations), Building Description, Building plan layout, List of codes and specs required, Code analysis and Project design criteria documents. Includes preparing requisitions for tagged equipment and materials of construction.
- LEED Silver requirements must be incorporated into the Administration Building (6048) specifications and design. The Administration Building shall be certifiable as LEED Silver. The remaining buildings will not be LEED certified but Subcontractor is to document LEED elements of the work they incorporate in design, procurements and

construction.

- A central control room (CCR) will be integrated into the NC Facility for control and monitoring of the production operation on the third floor of the Nitration building.
- The CCR will be accessible by elevator and stairs and will comply with ADA regulations

### **B.1 Specifics for Architectural Works**

Additionally, Subcontractor is responsible for design, supply and installation of interior features, including Lab countertops and caseworks (including sinks and bases), Washrooms and Water Closets (includes lavatory, urinals, sinks, mirrors, towel dispensers, barriers/partitions/toilet stalls, grab bars and similar items, cabinets, plastic cubbies, FRP coverings, backsplash, showers with curtain rods), Metal Ramps, Truck Dock Levelers, Janitors Sink and Water Fountains, Wall Mounted Works (includes light switch, thermostats, receptacles, phone/computer jacks, fire extinguisher cabinets and fire alarm pull stations), Metal Doors (including frames and hardware, including storefront systems, jam anchors, backer rods with sealant, grouting and rubber mats at thresholds) and Windows (Glazing) (including frames) (NOTE: Storefront systems are in doors count).

Included are Cementitious Fireproofing (includes all elements of the work at designated steel surface areas), Dock Levelers (including detailed design, manufacture/fabrication and install), Carpeting and Vinyl Composition Flooring.

Chemical-resistant coatings for horizontal and vertical surfaces including structural carbon steel framing and components, concrete floor slabs, walls, trench drains, sumps, curbs, and pump bases are required within all process areas. Coatings shall be resistant to acid and mixed acid concentrations, expected durations, weather exposures, and specific area requirements as identified in LEC Specification 09 96 35. All chemicals, coatings, sealants, paints shall be subject to nitrateability and compatibility testing and approved by BAE Systems' Toxicity Review Board (TRB) prior to entry within the plant limited area.

Exterior elements of the work include the following:

- Landscaping with shrubbery, rock, mulch and/or other vegetative ground cover, finish graded and seeded in accordance with LEED® and UFC 4-010 01 requirements shall be installed in areas within the site disturbed by construction not covered by structures or pavement.
- Bike racks at the Administration Building.
- All utilities that are conveyed overhead within 10 feet horizontal of the edge of a roadway will maintain a minimum vertical clearance of 16 feet above the road surface.

### **B.2 Architectural Works Specifications**

Subcontractor will develop specifications for the architectural works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 06 10 00	Rough Carpentry
UFGS 06 18 00	Glue-Laminated Construction
UFGS 06 20 00	Finish Carpentry

UFGS 06 41 16.00 10	Laminate Clad Architectural Casework
UFGS 06 61 16	Solid Polymer (Solid Surfacing) Fabrications
UFGS 07 05 23	Pressure Testing an Air Barrier System for Air Tightness
UFGS 07 11 13	Bituminous Damp Proofing
UFGS 07 12 00	Built-Up Bituminous Waterproofing
UFGS 07 13 53	Elastomeric Sheet Waterproofing
UFGS 07 14 00	Fluid-Applied Waterproofing
UFGS 07 16 19	Metallic Oxide Waterproofing
UFGS 07 17 00	Bentonite Waterproofing
UFGS 07 19 00	Water Repellents
UFGS 07 21 13	Board and Block Insulation
UFGS 07 21 16	Mineral Fiber Blanket Insulation
UFGS 07 21 23	Loose Fill Thermal Insulation
UFGS 07 22 00	Roof and Deck Insulation
UFGS 07 24 00	Exterior Insulation and Finish Systems
UFGS 07 27 10.00 10	Building Air Barrier System
UFGS 07 41 13	Metal Roof Panels
UFGS 07 41 63	Fabricated Roof Panel Assemblies
UFGS 07 42 13	Metal Wall Panels
UFGS 07 42 63	Fabricated Wall Panel Assemblies
UFGS 07 51 13	Built Up Asphalt Roofing
UFGS 07 52 00	Modified Bituminous Membrane Roofing
UFGS 07 55 00	Protected Membrane Roofing (PMR)
UFGS 07 57 13	Sprayed Polyurethane Foam (SPF) Roofing
UFGS 07 60 00	Flashing and Sheet Metal
UFGS 07 61 01	Copper Roof System
UFGS 07 61 14.00 20	Steel Standing Seam Roofing
UFGS 07 61 15.00 20	Aluminum Standing Seam Roofing
UFGS 07 62 10	Copper Sheet Metal Flashing
UFGS 07 72 00	Roof Ventilators, Gravity-Type
UFGS 07 81 00	Spray-Applied Fireproofing
UFGS 07 84 00	Firestopping
UFGS 07 92 00	Joint Sealants, Division 08 – Openings
UFGS 13 34 19	Metal Building Systems
UFGS 08 11 13	Steel Doors and Frames
UFGS 08 11 16	Aluminum Doors and Frames
UFGS 08 11 69	Metal Storm Doors
UFGS 08 11 73	Sliding Fire Doors
UFGS 08 13 73	Sliding Metal Doors
UFGS 08 14 00	Wood Doors
UFGS 08 22 20	Fiberglass Reinforced Plastic (FRP) Doors and Frames
UFGS 08 32 13	Aluminum Sliding Glass Doors
UFGS 08 33 13	Metal Rolling Counter Doors
UFGS 08 33 23	Overhead Coiling Doors
UFGS 08 34 16.10	Steel Sliding Hangar Doors
UFGS 08 34 16.20	Vertical Lift Fabric Doors
UFGS 08 34 16	Corrosion Control Hangar Doors
UFGS 08 34 19.10 20	Rolling Service and Fire Doors



UFGS 08 34 73	Sound Control Door Assemblies
UFGS 08 36 13	Sectional Overhead Doors
UFGS 08 36 19	Vertical Lift Doors
UFGS 08 39 54	Blast Resistant Doors
UFGS 08 41 13	Aluminum-Framed Entrances and Storefronts
UFGS 08 44 00	Curtain Wall and Glazed Assemblies
UFGS 08 51 13	Aluminum Windows
UFGS 08 51 23	Steel Windows
UFGS 08 51 69.10	Aluminum Storm Windows
UFGS 08 52 00	Wood Windows
UFGS 08 53 00	Plastic Windows
UFGS 08 56 46.20 20	Radio Frequency Shielded Enclosures (Welded Type)
UFGS 08 56 53	Blast Resistant Tempered Glass Windows
UFGS 08 60 45	Skylights and Translucent Panels
UFGS 08 71 00	Door Hardware
UFGS 08 81 00	Glazing
UFGS 08 87 16	Fragment Retention Film for Glass
UFGS 08 91 00	Metal Wall and Door Louvers

Specialties specification references include:

UFGS 10 10 00	Visual Communications Specialties
UFGS 10 14 00.20	Interior Signage
UFGS 10 14 01	Exterior Signage
UFGS 10 14 53	Traffic Signage
UFGS 10 21 13	Toilet Compartments
UFGS 10 21 23.16	Cubicle Track and Hardware
UFGS 10 22 13	Wire Mesh Partitions
UFGS 10 22 19	Demountable Moveable Partitions
UFGS 10 22 26.13	Accordion Folding Partitions
UFGS 10 22 26.23	Coiling Partitions
UFGS 10 22 39	Folding Panel Partitions
UFGS 10 22 43	Sliding Partitions
UFGS 10 26 13	Wall and Corner Guards
UFGS 10 28 13	Toilet Accessories
UFGS 10 44 16	Fire Extinguishers
UFGS 10 51 13	Metal Lockers
UFGS 10 56 13	Steel Shelving
UFGS 11 13 10	Dock Levelers

Specification references for wall materials, flooring materials, coatings and painted finishes include:

UFGS 09 06 90	Color Schedule
UFGS 09 22 00	Supports for Plaster and Gypsum Board
UFGS 09 22 36	Lath
UFGS 09 23 00	Gypsum Plastering
UFGS 09 23 82	Fireproof Gypsum Plastering

UFGS 09 24 23	Stucco
UFGS 09 26 00	Veneer Plaster
UFGS 09 29 00	Gypsum Board
UFGS 09 30 13	Ceramic Tiling
UFGS 09 35 16	Chemical Resistant Quarry Tile
UFGS 09 51 00	Acoustical Ceilings
UFGS 09 62 38	Static Control Flooring
UFGS 09 65 00	Resilient Flooring
UFGS 09 66 13	Portland Cement Terrazzo
UFGS 09 66 16	Terrazzo Tile
UFGS 09 66 23	Resinous Terrazzo Flooring
UFGS 09 67 23.13	Standard Resinous Flooring
UFGS 09 67 23.14	Chemical Resistive Resinous Flooring
UFGS 09 68 00	Carpeting
UFGS 09 69 13	Rigid Grid Access Flooring
UFGS 09 69 19	Stringer-less Access Flooring
UFGS 09 72 00	Wallcoverings
UFGS 09 83 13	Acoustical Wall Treatment
UFGS 09 90 00	Paints and Coatings
UFGS 09 96 00	High Performance Coatings
UFGS 09 96 59	High-Build Glaze Coatings
UFGS 09 97 02	Painting: Hydraulic Structures
UFGS 09 97 13.00 40	Steel Coatings
UFGS 09 97 13.16	Interior Coating of Welded Steel Water Tanks
UFGS 09 97 13.27	Exterior Coating of Steel Structures
UFGS 09 97 13.28	Protection of Buried Steel Piping and Steel Bulkhead Tie Rods
UFGS 09 97 23.16	Linseed Oil Protection of Concrete Surfaces
UFGS 09 97 23	Metallic Type Conductive/Spark Resistant Concrete Floor Finish
UFGS 09 97 30	Preparation of Historic Wood and Metal Surfaces for Painting

### B.3 Additional Architectural Requirements

B.3.a The Nitration building, the control room and its associated elevator lobby and toilet, and access to and egress from this portion of the Process building, are required to meet accessibility standards in accordance with the requirements of the DEPSECDEF Memorandum "Access for People with Disabilities" dated 31 October 2008. The memorandum updates the DoD standards for making facilities accessible to people with disabilities. The US Access Board issued an update of the accessibility guidelines which the DEPSECDEF Memorandum implements with military unique requirements specified in the memorandum attachment. The new DoD, "ABA (Architectural Barriers Act) Accessibility Standard" and the DEPSECDEF Memorandum are located at [http://www.accessboard.gov/ada%2Daba/aba standards-dod.cfm](http://www.accessboard.gov/ada%2Daba/aba%2Dstandards-dod.cfm) 4.1.2.2 The remainder of the Process buildings and the Cutter/Warehouse building are not required to meet accessibility standards.

B.3.b In laboratory spaces, provide stainless steel casework, base cabinets and equal upper cabinets as shown on the drawings. Within control areas subject to frequent wash-down casework shall be corrosion and water resistant. Within the control areas all casework and countertops shall be static dissipative and chemical resistant. Provide fume hoods as

necessary to accomplish all testing requirements. . Laboratory walls of the NC drying area must be blast relief walls.

B.3.c Special design emphasis shall be given to the entrance of the Administration building located on the west side of the building. The vestibule area will serve as the formal entry to the facility. Finishes within this area shall be of higher quality and aesthetics than in the other spaces, but durability and maintainability remain important. Lobby flooring material shall be porcelain pavers, and walls will be of abuse-resistant gypsum board all color matched, as a minimum. Bulletin boards and an area for awards or notification shall be provided.

B.3.d Provide an automated external defibrillator (AED) in the Administration building in a location convenient to office and gathering areas.

B.3.e In the Nitration building create support areas separated from the process by [REDACTED] concrete or reinforced masonry walls creating a "safe haven core" in the building. These areas are mechanical/utility room on the first floor, electrical room on the second floor, control room, communications room, instrumentation room and single toilet on the third floor. A [REDACTED] rated fire stair, circulation space, and a passenger/freight elevator providing access to floors 1 through 3 shall be provided.

B.3.f A 2 hour rated fire stair, circulation space, and a passenger/freight elevator providing access to floors 1 through 3 shall be provided. A passenger/freight elevator with stops on all floors must be provided. See APPENDIX G, Section 7 (Architectural Floor Plans) for a proposed solution to facility size and space adjacencies."

B.3.g All surfaces in the Nitration building must be able to withstand frequent fire hose wash down.

B.3.h The control room shall provide a safe ergonomic work environment for the operators, while allowing access to multiple process areas.

B.3.i Provide uni sex toilet located on the third floor of the Nitration building.

B.3.j A [REDACTED] [REDACTED] firewall shall separate the Nitration building from the Stabilization building.

B.3.k The deflakers and refiners for both process lines shall be in an acoustical room or enclosure to reduce the noise in the Stabilization area. The enclosure and any mechanical intake or exhaust for this enclosure should be designed so as to allow one to hear normal conversation, approximately 60-70 decibels, outside the enclosure in the stabilization area.

B.3.l A [REDACTED] firewall separates the Stabilization building from the Dewatering building.

B.3.m All surfaces in the Dewatering building will be able to withstand frequent wash-down.

B.3.n Provide four loading docks for the shipping of finished goods and the receipt of empty containers by over the road trucks. Loading docks should be 48 inches above the apron and include 9 feet wide by 10 feet high (min.) The far west dock shall be acceptable for use with the RFAAP powder van. Insulated, electrically operated, overhead doors, 30,000 pound hydraulically operated dock levelers, truck locks with security truck indicator lights, truck bumpers, task lighting and dock shelters

B.3.o The minimum sustainable design rating level for the Administration/Lab Building is to achieve LEED-NC Silver and shall be certifiable by the USGBC as having met the USGBC LEED-NC requirements for the required rating level.

B.3.p Provide pressure relief insulated metal wall panels as determined by the Fire Protection Engineer of Record.

B.3.q Provide removable panels within the exterior enclosure to facilitate the ingress and egress of all tanks and major equipment pieces.

B.3.r Provide insulation and vapor retarder as required by ASHRAE 90.1 and appropriate design practices.

B.3.s Provide exterior louvers and screens, where required, that match the finish of the windows and detailed to integrate with the architecture of the building, as appropriate to the design of the building.

B.3.t Provide field applied exterior coatings for all items that are not prefinished. Where an item is supplied unfinished, finishing shall be completed to match the quality of those items finished in a factory or shop environment. Exterior coatings shall be the most cost effective to achieve the service life requirements in section 3 of this statement of work.

B.3.u Where panel joints are open, provide exterior application of joint sealants to seal joints and prevent water and air migration into building.

B.3.v Provide screen walls where required to screen mechanical units, electrical substations, and trash receptacles. Screen walls shall be compatible with the building architecture.

B.3.w As much as practical, windows shall be provided in each area of the building that is regularly occupied, to enhance the working environment, without compromising visual acuity and comfort.

B.3.w. Windows or translucent panels within corrosive areas shall be chemical resistant and shall have stainless steel frames or other material which is corrosion resistant.

B.3.x Natural lighting for the Nitration, Stabilization and Dewatering buildings by means of high translucent wall panels is desirable. Reference AAMA 101, WDMA 1.5.2, and CSA A440-11. Reference UFC 4 01-01 for AT/FP window requirements.

B.3.y Doors shall be Extra Heavy Duty Doors ANSI /SDI A250.8, Level 3, physical performance Level A, Model 1. Exterior doors and frames in non-corrosive areas shall be galvanized prior to being painted. Exterior doors and frames in the Nitration building and Dewatering building shall be stainless steel. Doors into the QC Lab control areas and the adjacent liquid storage room should be capable of resisting any over pressure resulting from any deflagration or similar type incident which could occur in the rooms. All exterior doors shall have an insulated core Administrative entrance, provide exterior glazed doors and entrances system, including factory finish aluminum framed door assemblies with insulated, glazing, frames, and hardware compatible with other buildings on the base and wall opening elements such as lintels, sills, through-wall flashings, and joint sealers.

B.3.z Overhead doors shall be NAGDM 102 Industrial designation. Doors shall be thermally insulated sectional overhead type or thermally insulated rolling service type. Doors shall have automatic operation. Doors shall be operated by three button electric power



conforming to NEMA MG 1, NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6 with auxiliary hand chain operation. NEMA 4.1 enclosures are required in Nitration, Stabilization and Dewatering/Packout areas.

B.3.aa Where electronic locks are not utilized, provide hardware keying compatible with the existing base wide keying system.

B.3.ab Built in gutter systems where drainage passes through an interior space or is concealed in the exterior cavity wall shall be prohibited. Refer to UFC 3-110 03, Roofing, and UFC 3-100 10N, Architecture for additional roofing requirements.

B.3.ac The floors in the Administrative area shall be poured-in-place concrete with the office area having vinyl composition tile and the laboratory, lab support areas, toilets/lockers/showers a ¼ inch monolithic resinous slip-resistant floor system with integral 4 inch high cove and base. Within the laboratory and lab support areas, the floor shall have chemical resistant and static dissipative properties. Topping specification shall be designed to handle incidental chemical spills cleaned within 48 hours of occurrence.

B.3.ad Within the Nitration, Stabilization and Dewatering buildings, where floors are constructed of poured in place concrete, they shall be protected with a ¼ inch thick (minimum), monolithic resinous flooring system, slip, thermal shock and, chemical resistant compatible with the chemicals and material being stored and utilized within the area. The flooring specified shall have static dissipative properties. Flooring system shall have an integral 6 inch minimal cove base and shall go up to the top of any concrete curbs which are designed into the floor. The cove shall be designed to minimize the entrapment and collection of NC. Where cove does not transition into a wall coating system, a cant shall be applied so as to minimize entrapment of NC. Topping specification shall be designed to handle incidental chemical spills cleaned within 48 hours of occurrence. Flooring system will withstand traffic loads that include intermittent fork truck and cart traffic. In areas where dry NC may be present the floor system shall have static dissipative properties. Flooring system shall include compatible joint filler for all penetrations, isolation, expansion and construction joints. Construction and control joint filler subject to vehicle traffic shall have a minimum Shore A hardness of 80.

Chemical-resistant coatings for horizontal and vertical surfaces including structural carbon steel framing and components, concrete floor slabs, walls, trench drains, sumps, curbs, and pump bases are required within all process areas. Coatings shall be resistant to acid and mixed acid concentrations, expected durations, weather exposures, and specific area requirements as identified in LEC Specification 09 96 35. All chemicals, coatings, sealants, paints shall be subject to nitrateability and compatibility testing and approved by BAE Systems' Toxicity Review Board (TRB) prior to entry within the plant limited area.

B.3.ae Provide 6 inch high concrete curbs around structural members, perimeter walls, and process equipment as required for spill containment. All equipment access doors shall be raised 6 inches for spill containment where sloped floor and floor drains do not provide adequate containment.

B.3.af Provide 6-inch high raised landings with concrete access ramps at all egress doors, stairwells and into the stair/elevator core from the process floor for spill containment where sloped floor and floor drains do not provide adequate containment. The ramp slopes and configurations shall meet life safety and egress requirements. The special floor coating shall

terminate at the top of the concrete curbs and landings.

B.3.ag All pipe chases are to be covered with stainless steel checker plate. The checker plate shall have a turned down edge that covers the top of the curb.

B.3.ah The third floors of Pre Stabilization and Stabilization, designated on the drawings as equipment mezzanines, shall be constructed of corrosion resistant open grate panels on corrosion resistant framing. Refer to APPENDIX A, Section 5, Structural.

B.3.ai The first through fourth floors of the Dewatering building, as designated on the drawings, shall be constructed as indicated in SOW APPENDIX A, Section 5, Structural and APPENDIX G of this RFP.

B.3.aj Raised concrete curbs around structural members, perimeter walls and process equipment are not required for spill containment.

B.3.ak In the Nitration building, all walls separating the process areas from the instrument shop/parts storage, MCC room and control room and the stair/elevator/exit corridor core shall be [REDACTED] and constructed to the roof or floor slab above for complete enclosure. Walls shall be constructed of reinforced CMU or concrete and shall be sealed and painted on all exposed surfaces of the wall with paint appropriate to resist and tolerate the corrosive environment and anticipated abuse. All stair enclosures shall have [REDACTED] walls.

B.3.al In the Dewatering building, all interior walls shall be constructed of reinforced CMU or concrete and constructed to the roof or floor slab above for complete enclosure and sealed and painted on all

B.3.am In areas which require a fire rated building structure, exposed carbon steel require an intumescent paint coating. See the Room Finish Schedule on the drawings for other wall coating requirements.

B.3.an Sound attenuation shall be required as follows:

- Between the Administration building and the Stabilization building, STC (sound transmission class) 54
- Between the Administration mechanical and electrical rooms and adjacent rooms, STC 54;
- Between the nitration process areas and the control room, STC 54; and
- Between the administration offices, conference room, lockers and adjacent rooms, STC 50.
- See Stabilization building notes in the SOW for sound criteria in the deflaker/refiner rooms.

B.3.ao All joints in partitions to be fully sealed, top and bottom and base runners shall be set in a full bed of acoustical sealant. Reference ASTM E 90 and ASTM E 413. Additionally, noise levels shall be limited to those specified in APPENDIX A, Section 2.11.6 of the RFP.

B.3.ap The complex shall have signage identifying all rooms within each structure. Signage design shall be approved by BAE Systems. All rooms shall have a room name and number. Provide exterior signage consistent with the Radford facility standard to identify the process structure and facility number. Provide signage submittals to BAE Systems for

approval of type, size, color, and location before purchase. Coordinate signage standards with UFC 3-120-10 and specification UFGS 10 14 01 Exterior Signage, and UFGS 10 14 02 Interior Signage. Signs must meet ADA requirements in those areas requiring ADA compliance.

B.3.aq Design assembly and arrangement of elevator, accessories, and supporting systems in accordance with ASME/ANSI A17.1 and meet the minimum requirements per UFC 1-200-01, UFC 3-600 and NFPA 101, put in all standards.

B.3.ar The Nitration building shall be equipped with a minimum 6000 pounds, 100 ft/min electric freight/passenger elevator to provide access to each of the 3 levels of the Nitration building. The elevator shall be sized to accommodate two workers with toolboxes, a pallet jack, and capacity for a heavy equipment weight that can be loaded on a pallet. The elevator shall be sized to accommodate a 24 inch by 84 inch ambulance stretcher in the horizontal, open position and shall be identified by the international symbol for emergency medical services (Star of Life). The elevator shall be designed for fire department emergency access to all floors. The elevator shall have a stainless steel checker plate flooring and chemical resistant wall coating.

#### C. Plumbing Engineering and Design, Procurement and Construction

Subcontractor is responsible for the following Plumbing engineering and design functions:

- Mechanical Plumbing Engineering & Design
- Mechanical Plumbing Sanitary Vents, Drains Sections, Details and Schedules
- Laboratory Gas Piping Plans, Sections and Details
- Mechanical underfloor and above ground Plans, Sections and Details
- Plumbing Specifications
- Laboratory Gas Piping Plans, Sections and Details
- Mechanical equipment and fixtures procurement specification packages
- Plumbing Specifications
- Equipment list and Motor HP list

##### C.1 Specifics for Plumbing Works

Subcontractor is responsible for design, supply and installation of Plumbing, including Piping for Gas, Air and Vacuum Systems (includes drains to sumps, domestic water hot/cold, vents sanitary/acid, gas water heater and system lines and metering, metallic/non-metallic piping, valves, cleanouts, firestops for openings and office area waste drainage system). Works includes insulation for plumbing systems.

##### C.2 Plumbing Works Specifications

Subcontractor will develop specifications for the plumbing works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 22 00 00	Plumbing, General Purpose
UFGS 22 05 48.00 20	Mechanical Sound, Vibration, and Seismic Control

UFGS 22 07 19.00 40	Plumbing Piping Insulation
UFGS 22 10 00.00 10	Vertical Pumps, Axial-Flow and Mixed-Flow Impeller-Type
UFGS 22 11 23.00 10	Submersible Pump, Axial-Flow and Mixed-Flow Type
UFGS 22 13 29	Sanitary Sewerage Pumps
UFGS 22 13 36	Pneumatic Sewage Ejectors
UFGS 22 14 29.00 40	Sump Pumps
UFGS 22 15 09.00 40	General Service Compressed-Air Systems Cleaning Procedures
UFGS 22 15 13.16 40	High-Pressure Compressed-Air Piping and Valves, Stainless
UFGS 22 15 14.00 40	General Service Compressed-Air Systems, Low Pressure
UFGS 22 15 19.13 20	Large Non-lubricated Reciprocating Air Compressors
UFGS 22 15 19.19 20	Non-lubricated Rotary Screw Air Compressors
UFGS 22 15 26.00 20	High and Medium Pressure Compressed Air Piping
UFGS 22 16 19.26 20	Large Centrifugal Air Compressors (Over 200 HP)
UFGS 22 31 00	Water Softeners, Cation-Exchange (Sodium Cycle)
UFGS 22 33 30.00 10	Solar Water Heating Equipment
UFGS 22 66 53.00 40	Laboratory Chemical Waste and Vent Piping
FGS 22 07 19.00 40	Plumbing Piping Insulation

### C. Additional Plumbing System Requirements

C.3.a A separate potable water service shall be brought into the mechanical room of each building.

C.3.b Location of water service outside the building is in the civil portion of the general technical requirements. Isolation shutoff valves shall be provided. Buildings shall be individually metered. Meters shall have pulse output capability for interface with the facility direct digital control (DDC) system. Plumbing piping shall be sized to accommodate flush valve plumbing fixtures and the equipment it is to serve.

C.3.c The flow of non-potable water, or any other non-potable liquids, into the potable water supply shall be prevented. Necessary measures to prevent backflow, cross connection, or backsiphoning shall be included in the design.

C.3.d Backflow isolation will be required on the supply mains serving all buildings; Subcontractor shall coordinate backflow prevention requirements, including requirements for maintenance accessibility and periodic testing, with BAE Systems.

C.3.e Subcontractor shall furnish and install potable water softening if water chemistry analysis indicates that the potable water supply to the facility has a hardness of 8 gr/gal or more. The softening system shall deliver water with hardness between 1 gr/gal and 3.5 gr/gal. Water chemistry analysis shall be the responsibility of the Subcontractor.

C.3.f At wall and floor penetrations, water piping runs shall be free from the structure and the opening packed with a resilient insulation material and fully caulked. Water supply pipes larger than 2 inches in diameter shall be suspended from the structure on neoprene-in-shear hangers or floor-mounted on resilient supports. Flexible pipe connectors will be used to connect the supply and drain pipes to vibrating units such as garbage disposals.

C.3.g Water Hammer: When required, install manufactured shock absorber, which



employs a gas-filled stainless steel bellows to absorb the shock.

C.3.h Tepid Water System For: emergency eyewash and shower stations throughout the Nitration, Dewatering, and Stabilization buildings, Tank Farm, and an eyewash station in the laboratory. Tempered potable water (60-90 degrees F) shall be supplied to all safety showers as required by codes and standards. Safety showers and eyewash stations shall conform to ANSI Z358.1, OSHA Title 29 CFR 1910.151. Multiple eyewash stations and showers must be able to operate simultaneously and still meet tepid water temperature requirements.

C.3.i A shutoff valve shall be furnished and installed to isolate each individual laboratory service from its source.

C.3.j Subcontractor shall provide space and storage racks for bottled gases. Storage facility and room shall meet NFPA and all applicable codes.

C.3.k Subcontractor shall provide a centrally piped system for laboratory vacuum. Subcontractor is responsible for final equipment sizing and selection.

C.3.l The laboratory vacuum at each point of use shall operate at a minimum of 19 in-Hg and 8 SCFM. Laboratory vacuum system piping shall be Type L hard drawn copper tubing conforming to ASTM B 819. Piping joints will be made with brazed fittings connections.

C.3.m Subcontractor shall provide a centrally piped system for laboratory compressed air. The laboratory compressed air system shall operate at 100 125 PSIG, 20 degrees F dew point or lower, oil-free, and filtered to 0.01 micron. Subcontractor is responsible for final equipment sizing and selection.

C.3.n All drain piping shall be sized in accordance with the expected maximum flows. Acid sewer shall be a gravity drainage system without traps. Where drains are enclosed, these shall be sloped so as to prevent possible build-up of material. Drain piping and fixtures shall be open in design to allow for periodic inspection, manual cleaning and removal of material following industry practices. Trench drain shall be utilized throughout the process area (Nitration, Stabilization and Dewatering building) for the collection of floor waste and overflows. Trench drains shall be designed where applicable with a removable heavy duty (fork truck rated) grating. Grating shall be designed such that it can be removed by one operator without the use of tools. Trench drains and the equipment shall be designed such that the trenches are accessible for inspection and periodic cleaning. Trench drains material of construction shall withstand the corrosion environment, wear and abrasion resistant, and non sparking. Reference Army Regulation 385-100 and Department of Defense Manual 4145.26 for standards for drainage design. Acid drain piping and fixtures shall be constructed of a material resistant to high temperatures (212 degrees F) and chemical attack by the acidic waste streams. The internal finish of the piping shall be smooth with minimal crevices or other such areas where acid or fines may collect.

C.3.o Administrative building lines shall be designed and installed with minimal deflection between supports.

C.3.p Design consideration must be given to maintain velocities within the drainage system and where a branch enters a trunk line a "wye type" connection shall be used.

C.3.q Acid drain shall exit the facility and tie into the site acid drain and waste treatment system. Acid sewer discharge from the facility to the site acid waste treatment system shall be monitored such that instantaneous and total flow rates are known. In the event of a large discharge, the System Operating Contractor, site ACO staff, and the onsite treatment facility operators shall be notified so that corrective action can be initiated.

**D. Heating, Ventilation and Air Conditioning (HVAC) Engineering, Design and Construction**

Subcontractor is responsible for the following HVAC engineering and design functions:

- HVAC System Life Cycle Cost Analysis (LCCA)
- HVAC Load Calculations
- HVAC Plans, Sections, Details, and Equipment Schedules
- HVAC Piping Drawings (includes isometrics and supports)
- HVAC Equipment Arrangement Drawings (Drawings shall show all major HVAC equipment including AHUs, fans, boilers, heat exchangers, expansion tanks, air separators and chemical feeders.) Includes vendor coordination.
- HVAC Schedules and Design Criteria
- HVAC P&ID's with sequence of Operations Controls
- HVAC Specifications (including equipment sizing)
- Vendor Equipment drawing reviews and approval
- Add all duct runs and HVAC equipment to the 3D model
- Coordination with all disciplines
- Prepare Procurement Requisitions for Tagged Equipment and Materials of Construction

**D.1 Specifics for HVAC Works**

Subcontractor is responsible for design, supply and installation of HVAC Systems including all chillers, AHUs, ducting, equipment, filtering, controls, vents, enclosures, diffusers, roof curbs, variable volume air boxes, unit heaters, make-up air units, hot water piping, steam piping, piping insulation, equipment insulation, expansion tanks, air separators, ductwork, ductwork insulation, hangers, supports, vibration isolators, supply fans, exhaust fans, louvers, diffusers, grilles, refrigerant piping, direct digital controls (DDC), testing/adjusting/balancing and all related elements of the works.

**D.2 HVAC Work Specifications**

Subcontractor will develop specifications for the HVAC works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 23 00 00	Air Supply, Distribution, Ventilation, and Exhaust Systems
UFGS 23 01 30.41	HVAC System Cleaning
UFGS 23 03 00.00 20	Basic Mechanical Materials and Methods
UFGS 23 05 15	Common Piping for HVAC
UFGS 23 05 48.00 40	Vibration and Seismic Controls for HVAC Piping and Equipment
UFGS 23 05 93	Testing, Adjusting, and Balancing for HVAC

## Section 01 10 00

UFGS 23 07 00	Thermal Insulation for Mechanical Systems
UFGS 23 08 00.00 10	Commissioning of HVAC Systems
UFGS 23 08 01.00 20	Testing Industrial Ventilation Systems
UFGS 23 09 13.34 40	Control Valves, Self-Contained
UFGS 23 09 23.13 20	BACnet Direct Digital Control Systems for HVAC
UFGS 23 09 23	Lonworks Direct Digital Control for HVAC and Other Building Control Systems
UFGS 23 09 33.00 40	Electric and Electronic Control System for HVAC
UFGS 23 09 53.00 20	Space Temperature Control Systems
UFGS 23 11 25	Facility Gas Piping
UFGS 23 21 13.00 20	Low Temperature Water (LTW) Heating System
UFGS 23 21 13.23 20	[High] [Medium] Temperature Water System Within Buildings
UFGS 23 22 13.35 40	Steam Traps
UFGS 23 22 23.00 40	Steam Condensate Pumps
UFGS 23 22 25.00 40	Steam Valves
UFGS 23 22 26.00 20	Steam System and Terminal Units
UFGS 23 25 00	Chemical Treatment of Water for Mechanical Systems
UFGS 23 31 13.00 40	Metal Ducts
UFGS 23 34 23.00 40	HVAC Power Ventilators
UFGS 23 35 19.00 20	Industrial Ventilation and Exhaust
UFGS 23 37 13.00 40	Diffusers, Registers, and Grills
UFGS 23 41 13.00 40	Panel Filters
UFGS 23 51 43.00 20	Dust and Gas Collector, Dry Scrubber and Fabric Filter Type
UFGS 23 51 43.01 20	Mechanical Cyclone Dust Collector of Flue Gas Particulates
UFGS 23 51 43.02 20	Electrostatic Dust Collector of Flue Gas Particulates
UFGS 23 51 43.03 20	Fabric Filter Dust Collector of Fly Ash Particles in Flue Gas
UFGS 23 54 16.00 10	Heating System; Gas-Fired Heaters
UFGS 23 54 19	Building Heating Systems, Warm Air
UFGS 23 57 10.00 10	Forced Hot Water Heating Systems Using Water and Steam Heat Exchangers
UFGS 23 63 00.00 10	Cold Storage Refrigeration Systems
UFGS 23 64 00	Packaged Water Chillers, Absorption Type
UFGS 23 64 10	Water Chillers, Vapor Compression Type
UFGS 23 64 26	Chilled, Chilled-Hot, and Condenser Water Piping Systems
UFGS 23 70 03.00 10	Heating and Utilities Systems, Central Steam
UFGS 23 72 00.00 10	Energy Recovery Systems
UFGS 23 72 26.00 10	Desiccant Cooling Systems
UFGS 23 73 13.00 40	Modular Indoor Central Station Air-Handling Units
UFGS 23 74 33.00 40	Packaged, Outdoor Heating and Cooling Makeup Air Conditioners
UFGS 23 76 00.00 10	Evaporative Cooling Systems
UFGS 23 76 00.00 20	Evaporative Cooling System
UFGS 23 81 00.00 20	Unitary Air Conditioning Equipment
UFGS 23 81 23.00 20	Computer Room Air Conditioning Units
UFGS 23 81 47	Water-Loop and Ground-Loop Heat Pump Systems
UFGS 23 82 00.00 20	Terminal Heating and Cooling Units
UFGS 23 82 01.00 10	Warm Air Heating Systems
UFGS 23 82 02.00 10	Unitary Heating and Cooling Equipment
UFGS 23 82 16.00 40	Air Coils

UFGS 23 82 19.00 40	Fan Coil Units
UFGS 23 82 23.00 40	Unit Ventilators
UFGS 23 82 43.00 40	Electric Duct Heaters
UFGS 23 82 46.00 40	Electric Unit Heaters
UFGS 23 83 00.00 20	Electric Space Heating Equipment
UFGS 23 84 16.00 20	Desiccant Dehumidification Equipment, General Purpose

### D.3 Additional HVAC System Requirements

D.3.a The engineer of record shall base primary HVAC system selection on a comparative LCCA using a minimum of three system schemes. Items to be included in the analysis are first cost, operating cost and maintenance cost based on a [REDACTED] as well as system performance expectations, reliability and maintainability. Reliability and maintainability of the HVAC systems is of primary importance, so considered systems must first satisfy those criteria. Based on this analysis, the engineer of record shall recommend the optimum system and base the actual HVAC design on that system. The suggested systems detailed in this statement of work are based on sound engineering judgment and shall be one of the schemes investigated in the life cycle cost analysis.

D.3.b The HVAC cooling design for the Nitrocellulose facility shall be based on the 1.0 percent cooling dry bulb (DB) temperature which is 90 degrees F, and the 1.0 percent mean coincident wet bulb (MCWB) temperature which is 73 degrees F. The heating design shall be based on the 99 percent heating DB temperature which is 17 degrees F.

D.3.c Interior design conditions for spaces requiring conditioned air including the administration building, lab, control room, receiving office, elevator equipment and communication/telephone room shall be 75 degrees F/50 percent relative humidity in the summer and 68 degrees F/30 percent relative humidity in the winter. The exception to the above is the server room which shall have year around design conditions of 65 degrees F/35 percent relative humidity.

D.3.d Minimum outside air rates for process areas including, Dewatering/, Nitration, Stabilization and Deflaker areas shall be three air changes per hour during heating season.

D.3.e Minimum outside air rates for process areas including, Dewatering/, Nitration, Stabilization and Deflaker areas shall be six air changes per hour or the necessary airflow to maintain the space no greater than 104 degrees F During the cooling season.

D.3.f Major HVAC equipment associated with the process areas including but not limited to air handling units, makeup air units, exhaust fans and heat exchangers shall be located in mechanical rooms, on equipment platforms in the space or on the roof. When deciding location of the HVAC equipment, consideration must be given to maintenance access, the requirement to avoid NC accumulation and the corrosive environment within the process areas.

D.3.g Air Filtration: Minimum Efficiency Reporting Value (MERV) 8 filters shall be provided upstream of all coils, velocity sensing devices, or other devices requiring protection from dust accumulation. Filters shall be easily accessible for maintenance.

D.3.h MERV 14 filters in separate filter banks shall be provided downstream of the supply fans. All filters should be installed to prevent leakage between the filter segments and



between the filter and its supporting frame. Roll filters, cleanable media, or other filtration systems requiring more intensive maintenance should be avoided. Filters shall be easily accessible for maintenance.

D.3.i HVAC Motors: All electric motors one HP and larger shall be premium efficiency type. Variable Frequency drives shall be provided for air handling units supply/return fans and hot water and chilled water distribution systems. Variable frequency drives shall be provided with a bypass switch, a manual starter and automatic restart feature.

D.3.j Calculations used for determination of primary and airside heating equipment should not include credit for internal load sources, including lighting, people, and equipment. These loads are typically not present, or are much reduced, at night and on weekends. Heat calculations should also take into consideration for an additional 15 percent capacity to accommodate morning warm up loads when night setback temperatures are utilized.

D.3.k HVAC System Design for Administration Areas: Single duct terminal reheat variable air volume shall be acceptable. Variable Air Volume (VAV) air handling systems will be of the minimum air quantity type. The air handling unit(s) shall be located in the mechanical room.

D.3.l The Administration Building HVAC systems shall be capable of providing thermal control zones for individual rooms or groups of similar use rooms not to exceed four (4) rooms on a single thermal control zone.

D.3.m All terminal boxes shall be pressure independent type.

D.3.n Sensitive areas such as the Server Room shall have HVAC available 24 hours per day, 7 day week, 365 days per year.

D.3.o The lab shall have a hot water heating, chilled water cooling air handling unit to provide make up air when the fume hood(s) are in operation. The fume hoods shall be provided with exhaust fan(s) and variable air volume controllers that provide a constant fume hood sash airflow and/or velocity. The lab AHU shall have variable volume flow and to controlled via feedback from the fume hood variable air volume controllers.

D.3.p The locker room shall be exhausted per ASHRAE 62.1 exhaust requirements.

D.3.q The laboratory and the control room areas are designated as controlled areas and shall have independent HVAC system isolated from main building systems and other controlled areas.

D.3.r Fans in controlled areas shall have explosion proof motors and spark resistant fans.

D.3.s HVAC System Design for Process Areas: Process areas as detailed in 6.3.5 shall not be mechanically cooled. The general ventilation and heating operation shall be as follows:

D.3.s.1 During summer (ventilation) operation the ventilation rate shall be calculated at six air changes per hour. Wall and roof mounted supply fans shall bring ventilation air into each space. Fans with separate filter banks shall be provided with MERV 14 filters upstream of supply fan. Ventilation air shall exit the building through roof and wall mounted exhaust fans and shall not be recirculated or returned to the space.

D.3.s.2 During winter (heating) operation and ventilation rate shall be calculated at

three air changes per hour. Roof or platform mounted make-up air units with face and by-pass dampers shall bring air into each space.

d.3.t Make-up air units shall be provided with MERV 14 filters upstream of the supply fan. Ventilation air shall exit the building through roof and wall mounted exhaust fans and shall not be recirculated or returned to the space.

D.3.u Building Mechanical Cooling Systems: The only areas authorized for mechanical cooling are the entire administration building including lab and server room, process control room, elevator equipment room, receiving office, instrumentation and communication rooms.

D.3.u.1 The Condensing units for process control room, server room, elevator equipment room, receiving office, instrumentation and telephone room shall be located exterior at grade or in process areas not prone to nitric or sulfuric acid vapors.

D.3.v Air Distribution System: The administration area will be provided with a variable speed air handling unit inside the building mechanical room. The AHU will be equipped with a hot water preheat coil with coil circulation pump, and chilled water cooling coil. Units will be insulated double walled construction with indoor air quality (IAQ) type positive sloped drain pans. Cooling coils will have UV sterilization lamps. The AHU will be equipped with outside air intake louvers capable of 100 percent outside air economizer operation. Each air handler will be initially sized for approximately 30 percent outside ventilation air (to be adjusted with final ventilation calculation based on ASHRAE 62.1) when not operating in 100 percent outside air economizer mode. Conditioning and ventilation air will be supplied to VAV terminal boxes in spiral or oval distribution duct unless space requirements limit height to rectangular duct. Minimum air volume of VAV terminal boxes shall be set either by minimum air change criteria or minimum volume necessary to provide the occupant ventilation per ASHRAE 62.1 requirements. Hot water reheat coil at VAV terminal shall be provided to maintain space conditions at temperatures as described above. Return air shall all be ducted back to the AHU and return fan. The return duct system shall be a 100 percent ducted return system. Return plenum ceiling shall not be used."

D.3.v.1 The process areas corrosive environment shall be evaluated per individual area and HVAC equipment including makeup air units, fans, louvers, ductwork and associated hangers and supports shall be made of material that will resist corrosion due to moisture and high nitric and sulfuric acid content. Ductwork in these areas will be limited to directional elbows or tees off of the supply fans and make-up air units. Design of ductwork shall consider the source of fumes, vapors and location of operators. Ducts should be positioned such that fumes and vapors are moved away from the operator area and exhausted.

D.3.w Process area ducts should be positioned such that fumes and vapors are moved away from the operator area and exhausted. Ductwork should be minimized in Dewatering and Nitration areas and any areas requiring washdown to prevent the buildup of nitrocellulose material on flat surfaces.

D.3.x The areas where the HVAC system shall be connected to the emergency power system include the lab control areas 2, 3 and 4, prep control area 1, liquid storage, staging and acid areas of the Administration building.

D.3.y Steel, copper or stainless steel: Steel and stainless steel shall utilize screwed (non-process areas only) or welded fittings 2 inches and smaller; welded fittings for 2 ½ inches and larger (Welded fittings are required for process areas). Copper shall utilize solder fittings. Press-fit type technology joining systems are acceptable. Subcontractor shall provide the facility with a spare crimping tool at completion of project, if this technology is used. The process areas corrosive environment shall be evaluated per individual area and HVAC piping including steam, hot water, condensate, valves, trim and associated hangers and supports shall be made of material that will resist corrosion due to high moisture and nitric and sulfuric acid content.

D.3.z In the administration area, piping distribution systems should be routed above the corridors whenever practicable; to minimize leaks, maintenance intrusion, and noise in occupied areas of the facility. Pipes shall not be routed through communications rooms or electrical rooms. In the process areas, piping shall be routed along exterior walls where possible and shall not be located as to interfere with facility operations, i.e. forklift traffic, tank/equipment maintenance.

D.3.aa A dedicated chemical pot feeder shall be supplied for each closed water distribution system. Chemical treatment shall provide for removal of oil, grease and permit flushing of wall scale, foreign matter and contaminants from the water system. Final chemical treatment shall provide for scale and corrosion inhibitors and pH control in the range of 8.0 to 10.0 for a period of one year. Water treatment shall be compatible (inorganic) for water servicing the nitration and acid systems.

D.3.ab. Administration air handling unit and process area make-up air units shall be double wall, internally insulated, readily maintainable units. Provide for access doors to all internal components, cooling and heating coils, etc. Access door shall be a minimum of 18" wide, except where upstream heating coil face access is available through filter housing, or where the downstream cooling coil face access is available through the fan section.

C.3.ac HVAC systems shall be designed to permit shutdown (night setback/setup, outside air shutdown) of individual areas or departments not in operation on a 24-hour basis.

D.3.ad Subcontractor will coordinate HVAC design interface with RFAAP Emergency Shutdown System.

D.3.ae Outdoor air intakes shall be located as far as practical, but not less than 30 feet, from exhaust outlets of ventilation systems (including dust collection system), combustion equipment (including the diesel emergency generator), laboratory exhaust and plumbing vent stacks, or from areas which may collect vehicular exhaust and other noxious fumes. Locate the bottom of air intakes serving central systems as high as practical but not less than 10 feet above ground level, or if installed above the roof, at least 3 feet above roof level. D.3.an. Duct branches serving each individual space shall be provided with a manual balancing damper, accessible above the ceiling, located as remote from the space supply or return fixture as practicable. The balancing damper provided as part of air diffusers is not to be used for system balancing.

D.3.af General Duct Design: Duct systems shall be designed in accordance with applicable criteria. Maximum velocity in ductwork mains shall not exceed 2500 fpm, and velocities in branch ducts and takeoffs shall not exceed recommended levels in these standards. Access panels shall be provided as necessary for access to fire dampers, smoke dampers, and

control equipment, and to facilitate periodic cleaning or disinfecting of ductwork. All supply air shall be provided in sheet metal ductwork.

D.3.af.1 All ductwork shall be constructed from materials as follows: (a) Supply, return and exhaust mains: galvanized sheet ASTM A525 coating G90. (b) Supply and return runouts within 5 feet of grille, register, or diffuser: polymer lined flexible ductwork. (c) Ductwork in process areas shall be made of stainless steel that resists the effects of high moisture and nitric and sulfuric acid. Comply with ASTM A 480/A 480M, type 304 or 316, cold rolled, annealed sheet.

D.3.af.2 The minimum pressure classifications and maximum airflow velocities for ductwork system shall be as follows: (a) Supply ducts between fan and VAV terminals 4" wg 2400 fpm. (b) Supply ducts downstream from VAV terminals 2" wg 800 fpm. (c) Supply duct downstream from MAU 2" wg 1200 fpm. (d) Return ducts 2" wg 1800 fpm. (e) Exhaust ducts 2" wg 1200 fpm.

D.3.ag Corridors shall not be used as return air plenums in any portions of facilities. Exceptions allowing transfer air for toilets and janitor's closets, as provided in NFPA 90A and 101, shall be permitted. The return system shall be a 100 percent ducted. Return plenum ceiling shall not be used.

D.3.ah Utilization of above ceiling areas for exhaust is not acceptable; all exhausted air shall be fully ducted from room to exterior. Outside air and return air in mechanical rooms shall be ducted. Use of the room as a plenum is not acceptable.

D.3.ai Upon completion of construction duct cleanliness shall be not less than Level B Intermediate Level as defined by SMACNA Duct cleanliness for New Construction Guidelines.

D.3.aj Duct lining shall not be used. Sound attenuators, packed type, which comply with ASTM C1071 and UL 181, shall be used in lieu of duct lining to attenuate fan noise.

D.3.ak Sound attenuation shall be provided in ductwork that is entering and exiting the Deflaker area. Sound attenuation shall be designed to limit the sound generated in the Deflaker room to achieve the noise requirements in section 3 of this SOW.

D.3.al Exhaust systems shall be provided for toilets, locker rooms, labs, equipment rooms, and other areas as needed. Exhaust airflow requirements are noted in ASHRAE 62.1. All exhaust discharge outlets shall be located above the building roof line and located to prevent short-circuiting to air intakes or other building openings. Exhaust fans shall be located at the end of the exhaust duct run (exhaust ducts to be under negative pressure).

D.3.am The required pressurization of individual spaces, relative to adjacent spaces or corridors, is indicated in UFC 3-410-01FA. Where a negative or positive pressurization are required for a given space, that pressurization shall be maintained by the HVAC system under all conditions of operation.

D.3.an The Administration building conference room and breakroom shall be provided with carbon dioxide sensor/transmitters if feasible to allow ventilation rates to be reduced when these spaces are less than fully occupied.

D.3.ao Provide lower explosion limit (LEL) sensors in the Stabilization pit. Sensors will



provide audio alarm and DDC alarm to control room if any explosive vapor reaches a predetermined volatile point.

D.3.ap General Personnel Access

D.3.ap.1 Maintenance Provisions: Safe and practical means of personnel access must be provided to, and within, all areas of the facility where equipment is located, to adequately provide for operation, routine maintenance, and replacement of the equipment. Access to equipment rooms from outside the facility shall be provided within equipment rooms and a minimum of thirty inches of clearance is required at all service points to mechanical equipment. The design of O&M personnel access ways should not provide less than 6 ft. of overhead clearance (except on intermittent basis), or require personnel to climb over equipment or crawl on hands and knees. Locate systems such that equipment and persons maintaining the equipment are protected from the elements as far as reasonably possible. Maintenance personnel access to equipment rooms, penthouses and other such features is to be along safe, clearly designated routes without ladders or temporary equipment. Locate AHU's in equipment rooms or within conditioned enclosures providing protection from the weather and safe, efficient access. Mechanical room location and layout shall consider coordination with other trade/code/manufacture clearances around and above equipment; sufficiency of space and access to equipment and optimization of distribution runs.

D.3.ap.2 Minimum clearances between electrical and mechanical equipment shall be as required by NFPA 70. Assure that practical means are provided for the removal/replacement of the largest and/or heaviest equipment item(s) located in the facility. Provide adequate pull space for all coils, heat exchangers, chillers and filters. Sufficient space shall be provided in above ceiling areas to facilitate equipment installation and O&M.

D.3.ap.3 Where suspended and mounted equipment is installed, provide a minimum of 60 inches clearance for headroom as required. For any location requiring routine maintenance access, which is not readily accessible from a 6 feet high portable ladder, provide a fixed ladder and/or catwalk.

D.3.aq HVAC service zones should be designed to coincide with smoke and fire zones whenever practicable. Ductwork penetrations of fire/smoke rated walls should be minimized, to minimize the required number of smoke/fire dampers and complexity of controls. Coordinate with the architectural design to assure that necessary access for inspection or service of these dampers is provided.

D.3.ar Contractor shall be responsible to assure that Seismic bracing of HVAC piping shall be coordinated with thermal expansion compensation features, to allow for the necessary pipe movement with temperature changes.

D.3.as Temperature controllers shall maintain space temperature within +/- 2 degrees F. Temperature control shall be provided for distinct individual thermal zones and shall be limited to no more than four similar rooms on any one temperature sensor. Temperature sensors shall be adjustable by the occupant and shall indicate space temperature. Temperature sensors shall have adjustment limits set by the DDC system to prevent over cooling or overheating.

D.3.at Humidity control shall be provided to meet the requirements given in UFC 3 410-01FA for individual spaces (generally 40-60 percent in most cases).

**E. Fire Protection, Detection and Alarms Engineering, Design and Construction**

Subcontractor is responsible for the following Fire Protection, Detection and Alarms engineering and design functions:

- Code Summary, Including Life Safety & Code Analysis Plan Drawing
- Fire Protection, Fire Extinguisher, and Fire Alarm Specifications
- Fire Water Calculations (Calculations for fire loop & Hydraulic calculations in accordance with NFPA Standards)
- Fire Protection Systems Underground and Aboveground Performance Plans, Sections/Details, and Schedules
- Fire Detection and Alarm Systems Underground and Aboveground Performance Plans, Sections/Details, Functional Matrix, Riser Diagrams, and Schedules
- Fire Extinguisher Location Plans
- Fire Protection and Fire Alarm List (Drawing, Tie in, Fire Alarm Panels)
- Technical Review of Fire Protection Contractor's Submittals
- Technical Review of Fire Alarm Contractor's Submittals
- Modeling fire protection systems in the 3D model
- Interfacing with other disciplines

**E.1 Specifics for Fire Protection, Detection and Alarms Works**

E.1.a BAE Systems wishes to avoid the use of fire protection systems filled with standing water over electrical and communications rooms. The fire protection system shall utilize the most efficient design to achieve this objective through either fire rated construction or a dry fire suppression system.

E.1.b Subcontractor is responsible for design, supply and installation of fire protection, detection and alarm systems intended for the protection of life and property include fire alarm control panel, primary and secondary power supply, initiating devices including:

- Manually actuated devices (fire alarm boxes, manual pull stations, break glass stations, call points or buttons)
- Automatically actuated devices detecting convected thermal energy, heat detector, products of combustion (such as smoke detector, radiant energy, flame detector, combustion gasses, fire gas detector, release of extinguishing agents and water-flow detector).

E.1.c included in this statement of work are notification appliances that utilize audible, visible and tactile means to alert the occupants of the need to evacuate or take action in the event of fire or other emergency. Evacuation signals may consist of simple appliances that transmit un coded information, coded appliances that transmit a predetermined pattern, and (or) appliances that transmit audible and visible textual information such as live or pre-recorded instructions, and illuminated message displays.

E.1.d Emergency voice alarm, integration with the RFAAP mass notification and emergency communications systems are also included in this statement of work for design, supply and installation of fire protection, detection and alarm systems.

**E.2 Fire Protection, Detection and Alarm Systems Work Specifications**

Subcontractor will develop specifications for the Fire Protection, Detection and Alarm Systems works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 21 12 00	Standpipe Systems
UFGS 21 13 00.00 40	Fire Suppression Sprinkler Systems
UFGS 21 13 13.00 10	Wet Pipe Sprinkler System, Fire Protection
UFGS 21 13 13.00 20	Wet-Pipe Sprinkler System, Fire Protection
UFGS 21 13 16.00 20	Dry-Pipe Fire Sprinkler Systems
UFGS 21 13 17.00 10	Dry Pipe Sprinkler System, Fire Protection
UFGS 21 13 18.00 10	Preaction and Deluge Sprinkler Systems, Fire Protection
UFGS 21 13 19.00 20	[Deluge] [Preaction] Fire Sprinkler Systems
UFGS 21 13 20.00 20	Foam Fire Extinguishing for Aircraft Hangars
UFGS 21 13 21.00 20	Foam Fire Extinguishing for Fuel Tank Protection
UFGS 21 13 22.00 20	Foam Fire Extinguishing for Haz/Flam Material Facility
UFGS 21 13 24.00 10	Aqueous Film Forming Foam (AFFF) Fire Protection System
UFGS 21 13 26.00 40	Deluge Fire Suppression Sprinkler Systems
UFGS 21 21 00.00 40	Carbon Dioxide Fire Extinguishing Systems
UFGS 21 21 00	Fire Extinguishing Sprinkler Systems (Residential),
UFGS 21 21 01.00 20	Carbon Dioxide Fire Extinguishing (High Pressure)
UFGS 21 21 02.00 20	Carbon Dioxide Fire Extinguishing (Low Pressure)
UFGS 21 21 03.00 10	Wet Chemical Fire Extinguishing System
UFGS 21 22 00.00 20	Halon 1301 Fire Extinguishing
UFGS 21 22 00.00 40	Clean Agent Fire Extinguishing Systems
UFGS 21 23 00.00 20	Wet Chemical Fire Extinguishing for Kitchen Cabinet
UFGS 21 30 00	Fire Pumps

### E.3 Additional Fire Protection, Detection and Alarm System Requirements

E.3.a A fire protection and life safety design analysis shall be provided for this project. It shall consist of a narrative and drawings. This analysis shall be submitted with the preliminary design submittal. The narrative shall be a discussion of fire and life safety considerations effecting the design and features implemented. This includes, but is not limited to, classification of occupancy (both per the IBC and NFPA 101); type of construction(s) present; height and area limitations (include calculations for allowable area increases); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; interior finish ratings; life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); analysis of automatic suppression systems and protected areas; standpipe systems; automatic and manual fire extinguishing systems; water supplies; smoke control; fire alarm system, including connection to the installation-wide system; fire detection systems; explosion prevention system, explosion relief sizing, and other pertinent fire protection data. Note that BAE Systems desire to avoid use of water suppression system(s) in electrical, communications and control rooms.

E.3.b Provide throughout the facility a complete, electrically supervised, addressable, intelligent, voice based, fire detection and alarm system with integrated mass

notification system in accordance with UFC 3-600 01, UFC 4 021 01, and as specified in this RFP. Provide mass notification in occupied areas as defined in UFC 4 010-01. Visual notification devices for mass notification shall be painted white, have yellow lenses, and be labeled "Emergency". Visual notification devices for fire alarm notification shall be painted white, have clear lenses, and be labeled "fire". Audible devices in finished areas shall be flush mounted speakers. Exterior speakers shall be suitable for exposure to the weather. Provide a Local Operator Console in the control room and the administration facility.

E.3.c Central Reporting Feature: The Subcontractor shall coordinate the NC facilities reporting system with the RFAAP Central Fire Alarm Reporting Station and BAE Systems.

E.3.d Provide separate Very Early Warning Fire Detection (VEWFD) in the server room, control room, and MCC rooms. Provide the VEWFD with an alert condition notification (pre alarm) and alarm condition. Pre-alarm shall initiate a supervisory alarm in the fire alarm system when early detection level is reached. It shall cause an alarm condition in the fire alarm system when the alarm level is reached activating alarm notification, and if provided, pre-action system water release.

E.3.e The fire alarm system shall supervise flow switches, tamper switches on all water based suppression valves controlling fire water supply, detection sub system operational status, knock box tamper switch, and other systems and devices required by applicable standards adopted in this RFP.

E.3.f Provide remote status test stations for spot and duct smoke detectors located higher than [REDACTED] above finished floor area. Test station shall be mounted [REDACTED] to [REDACTED] above finished floor.

E.3.g Provide a remote annunciator panel at the main entrance to each building or as directed by BAE SYSTEMS. A second remote annunciator panel shall be located in the control room of the nitration facility. Annunciator panel shall have visual display showing all messages main fire alarm panel displays and ability to silence and reset the system.

E.3.hi System shall be wired Class A. Signal Line Circuits (SLC's) shall be wired Class A, Style 6. System wiring shall be in enclosed metal raceway constructed in accordance area with area NEMA and NEC hazard classification.

E.3.i Provide explosion protection in accordance with Government standards and National Fire Protection Association (NFPA) standards where explosion hazard exist. The FPEOR shall evaluate potential for explosions and probable magnitude of the event based on the process, system, equipment and facility provided. Appropriate safe guards shall be provided as a part of the Subcontractor's proposal. Areas of possible concern include, but are not limited to, the cellulose pneumatic conveying system and their dust collectors, nitration centrifuge areas, dewatering centrifuge and compaction area, NC testing laboratory, and bulk lab materials storage and handling areas. Proposed methods shall be explained in detail in the proposal for approval by the Government.

E.3.j The following requirements apply to the fire alarm system:

- The [REDACTED] shall be compatible with the Fire Department receiving system, operating on an [REDACTED].
- The [REDACTED] shall be a [REDACTED] or approved equal. The fire alarm receiving system is a [REDACTED] system.
- The information sent to the Fire Department receiving system shall be zone by zone information.



- All tamper devices shall be sent to the [REDACTED] system as a supervisory tamper.
- All initiating devices shall be connected, Class A, to signal line circuits (SLC), Class A.
- All alarm appliances shall be connected to notification appliance circuits (NAC), Class A in accordance with NFPA 72.
- Provide photoelectric smoke detectors with [REDACTED] obscuration, pigtails for permanent connections, continuous power indicator light, test button, and metal base.
- [REDACTED] shall be equipped with a [REDACTED].
- Fire alarm pull boxes shall be of metal construction, dual-action, and key operable.
- Fire alarm system shall be integrated with the RFAAP existing mass notification system
- Fire alarm system shall be capable of transmitting messages from the mass notification system including requirements for speakers to transmit fire alarm signals and MNS voice signals as well as amber strobe circuits.
- Do not use glass or lockable doors in fire extinguisher cabinets.

**F. Process, Mechanical and Piping Systems Engineering, Design, and Construction**

Subcontractor is responsible for the following process, mechanical and piping systems detailed engineering and design:

PFDs and P&IDs have been redlined with all known process changes to date including required actions from the preliminary PHA. However, Pack-out, NOx, Fire Protection, Tepid Water, Metal Removal, Super Sac (Soda ash handling), HVAC, Laboratory, Waste Water Recovery, Emergency Diesel Generator and Reverse Osmosis (RO) system designs are not fully determined and will require modifications to PFDs and P&IDs; no preliminary PHA has been performed for these systems. Subcontractor will revise and approve PFDs and P&ID's based on the redlined documents, (see APPENDIX G), and any engineering changes resulting from completion of the facility design, validation of the exiting redlined PFD's and P&ID's and incorporating results from the final PHA and HAZOPS. Packout system process equipment is being purchased by BAE Systems and the Subcontractor shall develop interfacing systems and components. Note also that the Super-Sack system specification for loading soda ash is being prepared by BAE Systems. At present BAE Systems intends to procure this system.

Subcontractor is responsible for performing the process description and design basis documents, including developing and calculating the following:

- Design Basis Process Flow Diagrams
- Process Instrumentation Diagrams
- Utility and Energy Requirements
- Heat and Material Balance
- Throughput Model
- Specifying and procuring mechanical equipment (for equipment not already being procured by BAE Systems)
- Mechanical Equipment Arrangements (General Arrangement Drawings) Piping Orthographic Plans, Sections and Details (modeled in 3D format and hard-copy for review). Includes pipe rack details and interfacing with all disciplines.
- Piping Isometrics (3D output with clearly defined Field Welds and Shop Welds, including weld-o-lets) that include materials specifications and quantities.

- Piping Support Details (both use of standard configurations and materials and special supports unique to specific line and location)
- Piping Specifications (includes material types and construction requirements)
- Welding Procedures Specification (includes Welder Qualification Procedures, and Weld Inspection Plan and Testing Procedures and NDE requirements and procedures) (must reference BAE Systems Drawing 11717, Welding Requirements "B")
- Piping Line List (includes line numbers, sizes, materials of Construction, temperatures, pressures, Insulation requirements, Testing pressure requirements and Steam / Heat Tracing requirements). Includes tie-in list and design packaging.
- Special Fittings / Specialty Items List
- Stress Analysis
- Identify Locations of Safety Shower/Eye Wash and Utility Stations with the area served (this can be shown on Mechanical Equipment (General) Arrangements)
- Equipment List (Reference OFE and equipment supplied by Subcontractor)
- Equipment Data Sheets/Specifications
- Noise Control Requirements (Identify where special measure has been taken to minimize noise and where hearing protection is required on General Arrangement drawings). Coordinate with BAE Systems for information on BAE Systems procured process equipment.
- Process Calculations (includes calculation on Relief Valves, Line Sizing and similar elements)
- Performance Test (designate required third-party performance tests )
- Vendor Equipment Drawing Review and Approval for certified process and utility systems, including electrical equipment
- Documents required include Process Equipment Data Sheets, Piping & Instrumentation Diagrams, Process Flow Diagrams, Drawings and Process Documents and Lists (including a comprehensive Line List and mechanical motor sizing list), Equipment plan and elevation layout drawings (general arrangements with x,y & z for all equipment target datum locations identified) , Piping specifications , Red Tag Valve List and Piping line list.
- Includes metering requirements for each utility system with procurement specifications.
- Identify tie-in locations and detailed installation diagrams with Bill of Materials for each system Tie-Point (TP) as-designated by BAE Systems.
- Mechanical equipment specification packages
- Equipment list and Motor HP list
- Maintain project equipment list.
- Provide vendor recommended start-up and [REDACTED] operational spares lists
- The subcontractor shall supply all installed equipment technical manuals and associated documentation to BAE Systems.
- Subcontractor will provide specifications and design drawings allowing for periodic washdowns during Plant life-cycle.

- Based on the air permit for the current RFAAP NC Facility, the objective of the NOx Treatment System is to reduce the NOx concentration to [REDACTED] ppmv, and emit no more than [REDACTED]
- [REDACTED] system will be a packed column wet scrubber
- The second stage of treatment will be a Selective Catalytic Reduction (SCR) system to convert the remaining NO and NO2 into nitrogen, oxygen and water vapor.
- Where overhead acid supply lines cross over a pedestrian access routes, drip protection shall be installed.

## F.1 BAE Systems Specifics for Piping Design

## F.1.a Pressurized Liquid Lines

F1.a.1 Lines that do not contain slurries shall be sized based on the following criteria (piping runs greater than 1000 ft. shall be sized based on pressure drop calculations and system requirements)

Nominal line size inches	velocity ft/sec		
1	3	to	5
1-1/2	3.5	to	5.5
2	4	to	7
3	5	to	8
4	6	to	10
6	8	to	12
8	9	to	13
10	10	to	13
12	11	to	14

F1.a.2 Slurry lines shall be a minimum of 3 inches nominal diameter and maintain a minimum velocity of 3.3 ft/sec and a maximum velocity of 10 ft/sec.

## F.1.b Pump Suction Lines

F1.2.1 Lines shall be sized based on the following general criteria, while also considering the NPSH requirements:

Nominal line size inches	velocity ft/sec		
1 to 8	3	to	6
10 or larger	5	to	8

## F.1.c Vapor Lines

F1.3.1 Lines shall be sized based on the following criteria

System Pressure	velocity ft/sec		
0 – 15 psia	125	to	200

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0 – 100 psig	50	to	120
100 – 200 psig	30	to	100
300– 1000 psig	20	to	50

## F.1.d Turn-up and Turndown Ratios

For the nitration section of the plant where equipment is operated in a continuous mode, the design criteria for maximum flow will be 1.25 times the material balance rates and the minimum flow will be 0.75 times the material balance rates.

## F.1.e Pump Drip trays in process areas shall be stainless steel or other appropriate material to resist acid corrosion.

## F.1.f Heat Exchanger Guidelines

F.1.f.1 All heat exchangers shall be provided with nozzles to properly vent and drain the units for start-up, shut-down and maintenance conditions.

## F.1.f.2 Shell and Tube Heat Exchangers

## F.1.f.2.a Tube Side Fluid Flow – Tube side velocity

Exchangers shall be designed with the following tube side velocities:

Service	velocity ft/sec		
Liquid	4	to	12
Vapor vacuum	80	to	200
Vapor pressure	50	to	120

## F.1.f.2.b Shell Side Fluid Flow – Shell side velocity

Exchangers shall be designed with the following shell side velocities:

Service	velocity ft/sec		
Liquid	2	to	5
Vapor vacuum	40	to	120
Vapor pressure	20	to	60

## F.1.f.2.c Shell and Tube Heat Exchanger Pressure Drop

Process side pressure drop should be designed based on process conditions.

Liquid service side pressure drop should be 7 to 15 psi when no flow control is provided. If flow control is provided on the service side of the exchanger, it should be designed such that combined pressure drop of the control valve at 100% open and the exchanger is 15 psi or less.

## F.1.f.3 Shell and Tube Heat Exchanger Fouling Factors

Service	hr ft <sup>2</sup> C / Btu	hr ft <sup>2</sup> F / Btu
River Water Tube Side	.00083	.0015
River Water Shell Side	.00083	.0015



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Condensing Process Vapor	.00028	.0005
Condensing Steam	.00028	.0005
Boiling Process	.00056	.001
Sub cooling overhead vapors	.00028	.0005
Glycol service	.00056	.001
Cooling process bottoms draw	.00056	.001

F.1.f.4 Shell and Tube Heat Exchanger Over Design shall be 10% based on area or as specified by the lead process engineer.

F.1.f.5 Shell and tube heat exchangers shall be TEMA style AEL which have removable channel covers to aid in cleaning of the tube side of the exchangers. The removable covers shall be attached with normal bolts and shall not use the clamps as shown on Bowas drawing.

F.1.f.6 Instrumentation will be installed in the piping going to or from the heat exchangers. Instrumentation nozzles that are mounted on the necks of the process and service nozzles of the heat exchangers as shown on the Bowas drawings will not be used.

F.1.g ASME vessels (not to include API storage tanks)

F.1.g.1 Design Metal Temperature:

28C (50F) degrees above maximum expected metal temperature that can occur during start-up, shut-down, normal or upset conditions.

F.1.g.2 Minimum Internal Design Pressure shall be the greater of the following:

Maximum operating pressure plus [REDACTED]

Maximum operating pressure plus [REDACTED]

[REDACTED]

F.1.g.3 Maximum operating pressure shall include start-up, shut-down, normal or upset conditions.

F.1.g.4 The maximum operating pressure for any vessel shall be determined based on the system it is interconnected to. As an example, a distillation column should be considered along with its support equipment such as the reboiler, condenser and reflux drum such that the most severe condition for any single vessel is considered for all of the vessels. This approach will significantly reduce the complexity of the vessel relief system.

F.1.g.5 Vacuum Ratings: All ASME vessels that are not provided with vacuum relief shall be rated for full vacuum unless specifically exempted by the client and the lead process engineer. As a general guide for large ASME vessels, the vessel should be designed for a minimum of [REDACTED] vacuum and provided with vacuum relief.

F.1.g.6 ASME vessel suppliers shall be required to rate and stamp the vessel for the maximum allowed working pressure allowed for the design.

F.1.g.7 Minimum metal thickness for ASME alloy vessels shall be 3/16 inch. Minimum metal thickness for carbon steel vessels shall be ¼ inch. This

requirement does not apply to heat exchanger heat transfer surfaces.

F.1.g.8 Corrosion allowance of 1/16" shall be specified for all carbon steel vessel components excluding heat exchanger tubes. Alloy vessels will not have a corrosion allowance unless it is specifically determined to be necessary based on process conditions.

F.1.h API and API type Storage Tanks and vessels rated below 15 psig.

F.1.h.1 Design Metal Temperature:

28C (50F) degrees above maximum expected metal temperature that can occur during start-up, shut down, normal or upset conditions.

F.1.h.2 The minimum internal design pressure shall be the greater of the following:

1.0 psig

The maximum operating pressure plus 20%. Maximum operating pressure shall include start up, shut down, normal or upset conditions.

F.1.h.3 The minimum design MAWW shall be -10" WC

F.1.h.4 For vessels with agitators, agitator loads must be provided to the vessel supplier so that the vessel can properly be designed for the added loads.

F.1.i Agitators

F.1.g.1 Shaft speed shall not exceed 70% of its first critical speed.

F.1.g.2 Coupling service factor shall be a minimum of 2.0 based on the motor nameplate power.

F.1.g.3 Gear reducer shall meet the requirements of AGMA-6010 E88, Helical and Bevel Gear Speed Reducers.

F.1.g.4 Gear reducer shall have an AGMA safety factor of 1.5 or greater. Safety factor shall be based on motor nameplate horsepower.

F.1.g.5 Agitator drive units shall be specifically designed for agitator service and shall be suitable for 24 hour per day operation under moderate shock load conditions.

## F.2 Specifications for Mechanical Works

Subcontractor is responsible for design interfaces, install and final setting of all Mechanical equipment, including supporting, shimming and grouting. Subcontractor will specify and purchase all equipment according to APPENDIX F. Subcontractor shall incorporate into design, maintain and test all equipment in accordance with Operation, Installation and Maintenance manuals provided by the vendors. Subcontractor will ensure that they will consult with vendor technical representatives on an as needed basis during installation and testing activities. Additionally, Subcontractor shall ensure all equipment rigging and setting operations are performed by a competent team of professional rigging and setting specialists. Shims shall be designed and limited to 2" height and must be fully loadbearing in design and installation. All tolerances required by the vendor must be adhered to without exception. All baseplates must be grouted in accordance with specifications. Mechanical Works includes insulation.

Note that APPENDIX F identifies equipment being purchased by BAE Systems, the

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Subcontractor is responsible to purchase all other tagged equipment.

Subcontractor will develop specifications for the mechanical works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 41 22 13.13	Bridge Cranes
UFGS 41 22 13.14	Bridge Cranes, Overhead Electric, Top Running
UFGS 41 22 13.15	Bridge Cranes, Overhead Electric, Under Running
UFGS 41 22 13.16	Gantry Cranes
UFGS 41 22 13.33	Portal Crane Track Installation
UFGS 41 22 23.19	Monorail Hoists
UFGS 41 24 26	Hydraulic Fluid Power Systems
UFGS 41 36 30.00 10	Ultrasonic Inspection of Plates
UFGS 41 65 10.00 10	Diesel/Natural Gas Fueled Engine Pump Drives, Division 42 - Process Heating, Cooling and Drying Equipment
UFGS 42 22 00.00 40	Process Chillers and Coolers
UFGS 42 22 13.00 40	Centrifugal Process Chillers and Coolers
UFGS 42 22 16.00 40	Reciprocating Process Chillers and Coolers
UFGS 42 23 13.00 40	Process Condensers, Division 43 - Process Gas and Liquid Handling, Purification and Storage Equipment
UFGS 43 11 00	Fans/Blowers/Pumps; Off-Gas
UFGS 43 13 13.13	Vapor Phase Activated Carbon Adsorption Units
UFGS 43 15 00.00 20	Low Pressure Compressed Air Piping (Non-Breathing Air Type)
UFGS 43 21 13	Pumps: Water, Centrifugal
UFGS 43 21 29	Flow Measuring Equipment (Potable Water) (Sewage Treatment Plant)
UFGS 43 21 39	Pumps: Water, Vertical Turbine
UFGS 43 31 13.14	Down flow Liquid Activated Carbon Adsorption Units
UFGS 43 31 14	Trickling Filter
UFGS 43 32 69	Chemical Feed Systems
UFGS 43 32 76	Chlorine Feeding Machines (Automatic, Semiautomatic and Manual)
UFGS 43 41 16.16 40	Vertical Atmospheric Tanks and Vessels, Division 44 Pollution and Waste Control Equipment
UFGS 44 10 00	Air Pollution Control
UFGS 44 13 52	Thermal (Catalytic) Oxidation Systems, Division 46 Water and Wastewater Equipment
UFGS 46 07 53.13	Packaged Wastewater Treatment Equipment, Aeration
UFGS 46 07 53.16	Packaged Wastewater Treatment Equipment, Biochemical
UFGS 46 20 20	Sewage Bar Screen and Mechanical Shredder
UFGS 46 23 00	Grit Removal and Handling Equipment
UFGS 46 24 16	Comminutors
UFGS 46 25 14	Coalescing [or Vertical Tube] Oil-Water Separators
UFGS 46 30 13	Advanced Oxidation Processes (AOP)
UFGS 46 43 21	Circular Clarifier Equipment

UFGS 46 51 00.00 10	Air and Gas Diffusion Equipment
UFGS 46 53 62	Continuous Loop Reactor Wastewater Treatment System
UFGS 46 61 00	Filtration Equipment
UFGS 46 66 56	Open-Channel Disinfection Equipment
UFGS 46 71 16	Gravity Belt Thickeners
UFGS 46 73 00.35	Sludge-Digester Gas, Heating, and Mixing System
UFGS 46 73 10	Floating Cover for Sludge-Digestion Tanks
UFGS 46 76 23.16	Recessed Chamber Filter Presses
UFGS 03 62 16	Metallic Non-Shrink grout
UFGS 23 07 00	Thermal Insulation for Mechanical Systems
UFGS 22 05 48.00 20	Mechanical Sound, Vibration, and Seismic Control
UFGS 22 10 00.00 10	Vertical Pumps, Axial-Flow and Mixed Flow Impeller-Type
UFGS 22 11 23.00 10	Submersible Pump, Axial Flow and Mixed-Flow Type
UFGS 22 14 29.00 40	Sump Pumps
UFGS 22 15 09.00 40	General Service Compressed-Air Systems Cleaning Procedures
UFGS 22 15 13.16 40	High-Pressure Compressed-Air Piping and Valves, Stainless
UFGS 22 15 14.00 40	General Service Compressed Air Systems, Low Pressure
UFGS 22 15 19.13 20	Large Non-lubricated Reciprocating Air Compressors
UFGS 22 15 19.19 20	Non lubricated Rotary Screw Air Compressors
UFGS 22 15 26.00 20	High and Medium Pressure Compressed Air Piping
UFGS 22 16 19.26 20	Large Centrifugal Air Compressors (Over 200 HP)

### F.3 Process and Piping Systems Works 3 Specifications

Subcontractor is responsible for detailed engineering and design, supply, installation, labeling, testing and commissioning of all piping systems, process and utilities and ISBL and OSBL and tie-ins to existing facilities. Works include detailing and fabrication of all piping, detailed design and installation of pipe supports, installation of piping, testing and flushing of all piping systems, commissioning and handover of all mechanical systems with testing documentation, (including weld radiography film, technical test reports and other documentation by third party (second-tier subcontractors). Works include installation of in line instrumentation and controls. Works also include all tie-ins to existing facilities, and insulation of piping systems as required. All pipe support baseplates at floor elevations must be grouted according to specifications.

### F.4 Specifications for Process and Piping Systems

Subcontractor will develop specifications for the piping systems works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 40 05 13	Pipelines, Liquid Process Piping
UFGS 40 05 13.96	Welding Process Piping
UFGS 40 17 26.00 20	Welding Pressure Piping
UFGS 40 17 30.00 40	Welding General Piping
UFGS 40 18 00.00 40	Vacuum Systems Process Piping
UFGS 40 95 00	Process Control
UFGS 33 01 99	Slip Lining of Existing Piping



UFGS 33 05 23.13	Utility Horizontal Directional Drilling
UFGS 33 05 23.19	Trenchless Excavation Using Micro-tunneling
UFGS 33 11 00	Water Distribution
UFGS 33 11 23	Natural Gas and Liquid Petroleum Piping
UFGS 33 12 33.00 30	Water Utility Metering
UFGS 33 16 15	Water Storage Steel Tanks
UFGS 33 26 00.00 10	Relief Wells
UFGS 33 30 00	Sanitary Sewers
UFGS 33 32 13.13	Packaged Sewage Lift Stations, Wet Well Type
UFGS 33 32 13.14	Package Sewage Lift Stations, Grinder Pump Type
UFGS 33 34 00	Force Mains and Inverted Siphons; Sewer
UFGS 33 34 13	Siphons, Dosing
UFGS 33 40 00	Storm Drainage Utilities
UFGS 33 45 00.00 10	Speed Reducers for Storm Water Pumps
UFGS 33 46 13	Foundation Drainage System
UFGS 33 46 16	Sub-drainage System
UFGS 33 47 13	Pond and Reservoir Liners
UFGS 33 51 13.00 30	Natural Gas Metering
UFGS 33 51 15	Natural Gas / Liquid Petroleum Gas Distribution
UFGS 33 56 13.13	Steel Tanks With Fixed Roofs
UFGS 33 56 13.15	Under-tank Interstitial Space
UFGS 33 56 19	Fuel Impermeable Liner System
UFGS 33 56 53	Pressure Vessels for Storage of Compressed Gases
UFGS 33 57 00	Bulk Fuel Receiving / Dispensing Equipment
UFGS 33 58 00	Leak Detection for Fueling Systems
UFGS 33 59 00	Tightness of Existing Underground Fuel Systems
UFGS 33 60 00.00 10	Central High Temperature Water (HTW) Generating Plant and Auxiliaries
UFGS 33 60 01	Valves, Piping, and Equipment in Valve Manholes
UFGS 33 60 02	Aboveground Heat Distribution System
UFGS 33 61 00	Prefabricated Underground Heating/Cooling Distribution System
UFGS 33 61 13	Pre Engineered Underground Heat Distribution System
UFGS 33 61 14	Exterior Buried Pre insulated Water Piping
UFGS 33 61 15	Heat Distribution Systems in Concrete Trenches
UFGS 33 63 13	Exterior Underground Steam Distribution System
UFGS 33 63 14	Exterior Buried Pumped Condensate Return
UFGS 33 63 16	Exterior Shallow Trench Steam Distribution
UFGS 33 63 23	Exterior aboveground Steam Distribution
UFGS 03 62 16	Metallic Non-Shrink grout
UFGS 23 07 00	Thermal Insulation for Mechanical Systems

## F.5 Additional Process, Mechanical and Piping Systems Requirements

### F.5.a Sanitizing/Disinfection:

Upon completion of piping, the potable water supply system shall be sanitized in accordance with the American Water Works Association Standard AWWA C651 or

AWWA C652 or the local authorities having jurisdiction, whichever is more stringent. Sanitizing/disinfection will not be complete until two consecutive days of bacteriological samples show no contamination. All bacteriological, lead and copper tests will be performed by Environmental Protection Agency (EPA) certified laboratories.

#### F.5.b Labeling:

All piping systems shall have permanent labeling on pipe and equipment. All above ground plumbing and piping systems shall be labeled per the latest version of ANSI Z535.1 and ASME A13.1. and the BAE Systems Piping Color Code chart below. Equipment shall be identified with engraved laminated black phenolic sheet with ¼ inch which lettering and indexed to a master schedule. The location of all valves and other such items requiring manual operation, service, or inspection shall be clearly identified. This identification can consist of labeling on the nearest door, ceiling or access panel.

#### BAE Systems Piping Color Codes

Fluid Code	Fluid	Color
NH3	Ammonia	Black
CELL	Cellulose	Brown
CWR	Chilled Water Return	Green
CWS	Chilled Water Supply	Green
COND	Condensate	Green
DUST	Cellulose Dust	Brown
EXG	Exhaust Gas	Yellow
FW	Filtered Water	Green
FWB	Filtered Water Boosted	Green
FP	Fire Protection Water	Red
HPS	High Pressure Steam	Yellow
HWR	Hot Water Return	Green
HWS	Hot Water Supply	Green
IA	Instrument Air	Blue
LPS	Low Pressure Steam	Yellow
MPS	Medium Pressure Steam	Yellow
MA	Mixed Acid	Orange
NGAS	Natural Gas	Yellow
NC	Nitrocellulose	White
NCA	Nitrocellulose (Acidic)	Orange
NOX	Nitrogen Oxide	Orange
OV	Oleum	Orange
PA	Plant Air	Blue

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PW	Potable Water	Green
RA	Retention Acid	Orange
RO	RO Water	Green
SODA	Sodium Carbonate	Purple
SA	Spent Acid	Orange
SNA	Strong Nitric Acid	Orange
SSA	Strong Sulfuric Acid	Orange
WA	Wash Acid	Orange
WWA	Acid Waste Water	Orange
WW	Waste Water	Gray

F.5.c Subcontractor shall provide compressed air in accordance with APPENDIX A, Section 2 for requirements for the facility.

F.5.d Meters shall be provided on all utility services for the new NC Facility. All process waste discharged from the facility shall be metered and monitored.

F.5.e All utilities that are conveyed overhead within 10 feet horizontal of the edge of a roadway will maintain a minimum vertical clearance of 16 feet above the road surface.

F.5.f Pumps with open impellers shall have minimum allowable gaps between the impeller surfaces and the inner surfaces of the pump housing.

F.5.g Rotating equipment shall be designed to keep these surfaces and chambers free of NC deposition.

F.5.h Process and shall be designed to prevent NC from accumulating in inaccessible locations (for example, hollow agitation shafts and handrails constructed from hollow structural shapes).

F.5.. Install flushing valves and/or nozzles to clean-in-place every process pipe and piece of equipment between NC batches or during shut-down.

F.5.j Threaded metal-to metal connections are prohibited on all vessels and piping containing NC. Instrument mounting connections shall utilize gasketed flanges. Piping shall be welded with gasketed flange connections where sections are joined.

F.5.k Shell and tube heat exchangers shall have the process flow on the tube side to facilitate cleaning.

F.5.l Ethylene glycol, propylene glycol or similar anti freeze agents shall not be used in process cooling or heating waters where the process side of the heat exchanger or jacket contains nitrating acids. Only additives not subject to nitration shall be used in these process cooling/heating waters and are subject to BAE approval.

F.5.m All chemicals, sealants, adhesives, materials, etc. must be tested for process compatibility and approved by BAE systems prior to entering the facility.

F.5.n Installation of centrifuges adjacent to removable wall panels to allow for the removal and replacement of entire units on a preventative maintenance cycle or in the event of failure.

F.5.o AMCR 385 100 requires that nitration vessels and other processes where agitation is safety-critical have at least two independent means of agitation. To address this requirement in the continuous nitration system all nitration vessels are piped to gravity

drain to a dump tank that is fitted with an agitator and pump around loop. On loss of agitation or other potential process upset condition, the contents of the nitration vessel are remotely dumped to this tank. P&IDs currently reflect this requirement.

F.5.p The duct burner should include a natural gas burner (estimated to be [REDACTED], blower motor for combustion air and a burner management system. The discharge temperature from the duct burner should be monitored by a temperature transmitter to provide feedback to a temperature controller. The burner management system should also provide a discrete signal to the plant control system that the heater is on. If the burner fails or is turned off, it should initiate shut down of the NC plant.

F.5.q The Subcontractor should work with the BAE Systems to estimate the trace amount of SO<sub>2</sub> that may be present in the off gas stream. The quantity should be very low but trace amounts could cause a poisoning of the SCR catalyst.

F.5.r The acid mixing system houses oleum (fuming sulfuric acid). The oleum tank will require freeze protection due to its location outdoors.

F.5.s The acid mixes for nitration will be batched at the acid area and tested in the process laboratory for total sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), total acidity as H<sub>2</sub>SO<sub>4</sub>, nitrosyl sulfuric, actual nitric acid, and water (by difference), prior to release to nitration.

F.5.t Proper design for safety in working with highly flammable solvents, dry NC, concentrated acids and other laboratory reagents is paramount. Containment of testing residues to prevent release to the environment, accumulation in piping or other areas, and improper disposal is also required.

F.5.u Suitable areas for drying and short term storage of NC samples will be required in the laboratory. The design intent is to minimize the amount of dry NC present and to set limits which are below the amount allowable by code in any Control Area within the Process Laboratory.

F.5.v Suitable areas for the storage and dispensing of various flammable solvents and corrosive chemicals will be required in the laboratory.

F.5.w Subcontractor will ensure all welding personnel (welders) are qualified and certified as B31.3 welders before assignment to the Project.

F.5.x Subcontractor will ensure adequate use of cleanout flanges on NC-related systems, to prevent accumulation and dryout of NC.

**G. Electrical Power, Controls, Communications and Security Systems Engineering, Design and Construction**

Subcontractor is responsible for the following electrical systems detailed engineering and design:

- Drawing Index (combine both Electrical and Instrument Drawings on one Index), Electrical Legend, Symbols and Abbreviations Standard Electrical Details (includes installation details for lighting, motor power, instrument and control wiring, raceway and raceway supports, termination details and similar detailed design elements)
- Verify all motor Horsepower ratings are correct
- Update and validate Elementary, One-Line Diagrams and MCC Single-Line Diagrams, Schematics and Arrangements
- Update and Validate Panel board Schedules



- Complete design drawings for power and lighting panel schedules lighting, electrical heat tracing, and instrument power panels (hazardous area plan drawings and Area Classification listing have been completed)
- Building Services and Lighting Plans
- Luminaire, Receptacle, and Switch Schedules
- Power and Control Plans and Electrical Total Demand Load List
- Grounding and Lightning Protection Plans (Below grade grounding and lightning protection pigtailed are being completed as part of the Mat Foundation contract)
- Interior Telecommunication and Security Plans
- Heat Tracing Plan, Details and List of Material (including Riser Diagram Heat Trace Control Panel Power and Grounding Installation Diagram)
- Electrical Schematics (see Instrumentation for Instrument Loop drawings)
- Electrical Power Equipment and Motor List/Load Study Interconnection Diagrams and/or Termination Lists (Using the BAE Systems provided ETAP model)
- Cable & Conduit Schedules or Conduit Riser Diagrams
- Electrical Equipment Specifications (Update) Provide electrical specifications for electrical equipment including substations (except transformer and medium and low voltage switchgear already being purchased by BAE systems), UPS, emergency generator, , MCCs, variable frequency drives (except those provided by BAE Systems), panel boards, switchboards, lighting transformers, cable and wiring, conduit, cable tray, lighting, fixtures, switches and similar components to complete the electrical requirements of the project. Includes, induction motors, Additionally, special systems such as CCTV, Fire (interface with fire detection and controls) and Security are required.
- Verify and validate Electrical Construction Specifications (Including installation of conduit, cables, wiring, electrical equipment, cable tray, tagging and identification requirements and similar elements of the work)
- Verify and Validate Coordination and Short Circuit System Analysis
- Arc Flash Study
- Verify and Validate the Harmonic Study
- Lighting Calculations
- Complete Voltage Drop Calculations
- Validate electrical room sizes and arrangements to ensure that there is adequate space for electrical equipment

#### **G.0 Specifications for Electrical Power, Controls, Communications and Security Systems Works**

Subcontractor will develop specifications for the electrical systems works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references include APPENDIX A: General Technical Requirements and the existing LEC standards in APPENDIX G: Existing Technical Documents:

UFGS 26 00 00.00 20	Basic Electrical Materials and Methods
UFGS 26 05 00.00 40	Common Work Results for Electrical
UFGS 26 05 13.00 40	Medium Voltage Cables
UFGS 26 05 19.00 10	Insulated Wire and Cable
UFGS 26 05 33	Dockside Power Connections Stations
UFGS 26 05 48.00 10	Seismic Protection for Electrical Equipment
UFGS 26 05 70.00 40	High Voltage Overcurrent Protective Devices

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UFGS 26 05 71.00 40	Low Voltage Overcurrent Protective Devices
UFGS 26 08 00	Apparatus Inspection and Testing
UFGS 26 09 23.00 40	Lighting Control Devices
UFGS 26 11 13.00 20	Primary Unit Substations
UFGS 26 11 14.00 10	Main Electric Supply Station and Substation
UFGS 26 11 16	Secondary Unit Substations
UFGS 26 12 19.00 40	Pad Mounted, Liquid Filled Medium Voltage Transformers
UFGS 26 12 19.10	Three Phase Pad-Mounted Transformers
UFGS 26 12 21	Single-Phase Pad-Mounted Transformers
UFGS 26 13 00	SF6/High Firepoint Fluids Insulated Pad-Mounted Switchgear
UFGS 26 13 01	Pad-Mounted Dead-Front Air Insulated Switchgear
UFGS 26 18 23.00 40	Medium-Voltage Surge Arresters
UFGS 26 20 00	Interior Distribution System
UFGS 26 22 00.00 10	480-Volt Station Service Switchgear and Transformers
UFGS 26 23 00	Low Voltage Switchgear
UFGS 26 23 00.00 40	Switchboards and Switchgear
UFGS 26 24 13	Switchboards
UFGS 26 24 16.00 40	Panelboards
UFGS 26 24 19.00 40	Motor Control Centers
UFGS 26 27 13.10 30	Electric Meters
UFGS 26 27 14.00 20	Electricity Metering
UFGS 26 27 29	Motor Control Centers, Switchboards and Panelboards
UFGS 26 28 01.00 10	Coordinated Power System Protection
UFGS 26 28 21.00 40	Automatic Transfer Switches
UFGS 26 29 01.00 10	Electric Motors, 3-Phase Vertical Induction Type
UFGS 26 29 02.00 10	Electric Motors, 3 Phase Vertical Synchronous Type
UFGS 26 29 23	Variable Frequency Drive Systems Under 600 Volts
UFGS 26 31 00	Solar Photovoltaic (PV) Components
UFGS 26 32 13.00 20	Single Operation Generator Sets
UFGS 26 32 14.00 10	Diesel-Generator Set, Stationary 15-300 KW, Standby Applications
UFGS 26 32 15.00 10	Diesel-Generator Set Stationary 100 2500 KW, with Auxiliaries
UFGS 26 32 33.00 10	Uninterruptible Power Supply (UPS) System Above
UFGS 26 33 53.00 20	Uninterruptible Power Supply (UPS)
UFGS 26 35 33.00 40	Power Factor Correction Equipment
UFGS 26 35 43	400-Hertz (HZ) Solid State Frequency Converter
UFGS 26 36 00.00 10	Automatic Transfer Switch and By-Pass/Isolation Switch
UFGS 26 36 23.00 20	Automatic Transfer Switches
UFGS 26 41 00	Lightning Protection System
UFGS 26 42 13.00 20	Cathodic Protection by Galvanic Anodes
UFGS 26 42 14.00 10	Cathodic Protection System (Sacrificial Anode)
UFGS 26 42 15.00 10	Cathodic Protection System (Steel Water Tanks)
UFGS 26 42 17.00 10	Cathodic Protection System (Impressed Current)
UFGS 26 42 19.00 20	Cathodic Protection by Impressed Current
UFGS 26 42 19.10	Cathodic Protection Systems (Impressed Current) For Lock Miter Gates
UFGS 26 42 22.00 20	Cathodic Protection System for Steel Water Tanks
UFGS 26 51 00.00 40	Interior Lighting
UFGS 26 51 00	Interior Lighting

UFGS 26 52 00.00 40	Emergency Lighting
UFGS 26 53 00.00 40	Exit Signs
UFGS 26 54 21.00 10	Helipad Lighting and Visual Navigation Aids
UFGS 26 55 53.00 40	Security Lighting
UFGS 26 55 80.00 20	Surgical Lighting Fixtures
UFGS 26 56 00	Exterior Lighting
UFGS 26 56 13.00 40	Lighting Poles and Standards
UFGS 26 56 19.00 40	Roadway Lighting
UFGS 26 56 20.00 10	Airfield and Heliport Lighting and Visual Navigation Aids
UFGS 26 56 23.00 40	Area Lighting
UFGS 26 56 36.00 40	Flood Lighting
UFGS 26 60 13.00 40	Low-Voltage Motors, Division 27 – Communications
UFGS 27 05 14.00 10	Cable Television Premises Distribution System
UFGS 27 05 28.36 40	Cable Trays for Communications Systems
UFGS 27 05 29.00 10	Protective Distribution System (PDS) for SIPRNET Communication Systems
UFGS 27 10 00	Building Telecommunications Cabling System
UFGS 27 13 23.00 40	Communications Optical Backbone Cabling
UFGS 27 21 00.00 20	Intercommunication System
UFGS 27 21 00.00 40	Intercommunication System
UFGS 27 21 10.00 40	Fiber Optic Data Transmission System
UFGS 27 41 00.00 10	Nurse Call Audio Visual (NCAV) System
UFGS 27 41 16.00 10	Television Signal Reception System
UFGS 27 51 16	Radio and Public Address Systems
UFGS 27 52 23.00 20	Nurse Call System
UFGS 27 52 32.00 10	Nurse Call Tone Visual (NCTV) System
UFGS 27 54 00.00 20	Community Antenna Television (CATV), Division 28 - Electronic Safety and Security
UFGS 28 05 26.00 40	Grounding and Bonding for Electronic Safety and Security
UFGS 28 16 00.00 20	Basic Intrusion Detection Systems (IDS)
UFGS 28 16 01.00 10	Small Intrusion Detection System
UFGS 28 20 00.00 20	Electronic Security System (ESS), Commercial
UFGS 28 20 01.00 10	Electronic Security System
UFGS 28 20 02	Central Monitoring Services for Electronic Security Systems
UFGS 28 23 23.00 10	Closed Circuit Television Systems

#### G.1. Additional Electrical Power and Control System Requirements

G.1.a Electrical rooms in the Process buildings shall have a minimum of two exit doors, regardless of the code allowing only one exit under certain conditions (process upset conditions could prevent a single exit from being useful). Electrical rooms shall be under positive pressure; HVAC shall be so designed as not to allow dust, corrosive chemicals, and flammable vapors into the room. The doors shall be big enough so that electrical panels and motor control centers (MCCs) can be moved in and out of the room without putting them on their sides. It is anticipated that there will need to be four electrical rooms in the Process buildings. The intent of these four electrical rooms is to distribute the MCCs, power panels, variable speed drives, and control system remote input/output (RIO) panels with similar functional elements. Drive cable length between drives and drive

motors shall be limited to the maximum distances recommended by the drive manufacturer.

G.1.b Group loads on feeders such that in case of a feeder failure, there will be a minimal loss of production. A feeder shall not feed multiple manufacturing lines.

G.1.c Design for at least 20 percent spare power capacity. Both diversity and demand factors can be used in determining the total load requirements. Each panel board, transformer, and switchboard shall incorporate at least a spare capacity of 20 percent (10 percent spare circuit breakers, 10 percent space for future circuit breakers).

G.1.d A Power factor of .93 to .95 should be achieved for the new NC Facility.

G.1.e Provide emergency generator power for critical items to ensure a safe shutdown of the plant in the event of a power interruption. Critical portions of the process, the control room, lighting, emergency lighting, and other emergency loads (security, fire alarm, mass notification, elevator, selected HVAC loads, etc.) shall be powered by a standby-rated generator. The maximum allowable time for switchover to the emergency generator due to process reasons is one minute. Refer to APPENDIX G, Section 5, Electrical Load List for critical process loads. The emergency generator is currently rated for 800 kW based on the preliminary design. The contractor shall validate the emergency generator ratings based on the final design.

G.1.f Provide an uninterruptible power supply (UPS) for the process control system and its associated I/O. The UPS for the control system shall be dedicated to the control system and I/O; no other loads are allowed on this UPS. There shall be sufficient UPS capacity to maintain power to all control system equipment as well as to the field instruments and valves for a minimum of 1.5 hours. Power to the control system UPS shall be from the emergency generator. The UPS is currently rated at 150 KVA based on the preliminary design. The contractor shall validate the UPS ratings based on the final design.

G.1.g Provide dry-type, step down transformer(s) 480-208/120 volts for 120 VAC lighting and receptacle panels and dry-type 480-480/277 volt transformers for 277 volt lighting.

G.1.h Power for instruments and controls (instrument and control power not supplied from control power transformers) shall be supplied from dedicated dry-type transformers at 120 volts, single phase, 60 Hz via the UPS. Instrument power transformers shall be connected for 120 volts only, not 120/240 and shall have an electrostatic primary to secondary shield. The distribution panel board shall not have circuit breakers larger than 15 amps.

G.1.i All process areas in the Nitration, Stabilization and Dewatering areas of the plant shall be suitable for fire hose wash down.

G.1.j All materials of construction shall be suitable for the corrosiveness of the area in which it is installed.

G.1.k The entire installation shall be such that final NC product and as it is in-process from Nitration through Dewatering cannot enter void spaces and be trapped (due to leaks of nitrated product and/or as a result of wash down of spilled material); when trapped and as it dries out, an explosion can occur.

G.1.l Specify motors with a temperature rise not to exceed 40 degrees C at rated load, measured on the housing. Degree of protection for motors in process areas shall, as a minimum beyond their area classification, include the following additional requirements: they must be suitable for washdown, suitable for the corrosiveness of the area in which



they are to be installed, have the proper maximum surface temperature "T" rating, have enclosures which prevent dust from entering the motor, and shall not have crevices in which NC can enter. Motors in the Dewatering and Packout areas shall have the additional requirement of being dust ignition proof (a dust ignition proof motor prevents dust from entering the motor from the outside whereas arcs, sparks and heat generated inside of the motor will not be able to ignite its exterior surroundings).

G.1.m Areas where non-nitrated cellulose dust can exist as dust particles suspended in air in quantities sufficient to produce an ignitable mixtures as defined by the NEC, but normally does not exist, are classified as Class II, Division 2, Group G (these include areas such as around the cellulose cutter dust collectors and the flex joints on the transfer line to the Nitration area, for example). In a NEC 500 Class III location, if there can be enough dust present, which may also become hazardous, the area shall be classified as a NEC 500 Class II location, not a NEC 500 Class III location. The transfer line itself (inside the line), is classified as NEC 500 Class II, Division 1, Group G.

G.1.n Electrical equipment installed shall be able to function at full rating without developing surface temperatures high enough to cause excessive dehydration, which would lead to self ignition of any possible accumulated process materials, leaks, or spills (applies for cotton, paper, NC slurry, as well as the final NC product itself). For areas in which NC is present (Nitration, Stabilization and Dewatering/Packout), the surface temperature of electrical equipment such as motors shall be limited to 2/3 of the 170 degrees C self-ignition temperature or 113 degrees C (235 degrees F).

G.1.o The NC process for this facility is water based, not solvent based. Therefore there are no NEC 500 Class I areas in the process building. Solvents are used in the lab for testing of the product. The lab areas therefore have both NEC 500 Class I and Class III electrical classified areas.

G.1.p A perimeter ground ring is being installed as part of the Mat Foundation. The subcontractor shall integrate d the grounding system incorporating the requirements for power system grounding, short circuit protection, control system and telecommunications grounding, lightning protection, static electricity protection, and cathodic protection. The grounding system shall adhere to the requirements of Institute of Electrical and Electronics Engineers (IEEE) Standard 142. The overall grounding system shall have a maximum acceptable resistance of 5 ohms between the grounding electrodes and ground. Supplemental ground or rods may be required as necessary to meet the 5 Ohm specification. Provide a perimeter ground ring electrode system around each building and outside of the process structure. Provide electrical continuity between all steel columns (Pig tails provided as part of the Mat Foundation contract), beams, trusses, other electrically conductive parts of buildings, and the building's perimeter ground. Building's perimeter ground ring shall include the following:

G.1.p.1 Exothermic welds at all connections.

G.1.p.2 Exothermic welded connections to the ground rod within 12 inches of the top of the rod.

G.1.p.3 Bond the ground ring at each building to any underground metallic water piping systems entering the building as per NEC.

G.1.p.4 Drive ground rods into earth 6 inches below finished grade and exothermic weld to the ground ring at each corner of the ring.

G.1.p.5 Drive rods at intermediate locations along each side of the building's

perimeter ground ring such that the space between two adjacent rods is in accordance with NFPA 780. Supplemental ground or devices rods shall be required as necessary to meet the 5 Ohm specification above.

G.1.p.6 Bond the ground ring at each building to the building's steel structural frame (if so constructed) at intervals no greater than 50 feet around the perimeter of the building. Bonding conductors shall be at least the size of the ground ring conductor.

G.1.p.7 Bring at least one grounding electrode conductor in directly from the ground ring to each electrical room or closet within the building. Stringent.

G.1.p.8. Test system per IEEE 142 and verify a maximum of 5 ohms to ground.

G.1.q. Connect to the substation ground grid which provided a safe "Step and Touch" potential at the Substation. Substation ground grid shall include the following:

G.1.q.1 Copper grounding ring around the entire substation concrete pad. Connect ring to rebar in concrete pad at a minimum of four locations (provided as part of the Mat foundation contract).

G.1.q.2 Ten feet long  $\frac{3}{4}$  inch copper clad ground rod at each corner (provided as part of the Mat foundation contract).

G.1.q.3 Crushed rock around substation with a minimum of 1.0 meter width and 150 mm depth (provided as part of the Mat foundation contract) .

G.1.q.4 Exothermic welds at all ground ring and ground rod connection points.

G.1.q.5 Tin plated dual crimp compression type approved grounding lugs with two  $\frac{1}{2}$  inch bolted connections to the equipment where exothermic welds are not practical.

G.1.r Provide a complete lightning protection system in accordance with NFPA 780 with Underwriters Laboratories (UL) Lightning Protection Inspection Certificate certified to UL 96A, including, but not necessarily limited to, strike termination devices, conductors, ground terminals, interconnecting conductors, surge suppression devices, and other connectors and fittings required for a complete and usable system. Work shall include installation of a complete lightning protection system on the entire NC facility such that the entire system meets the UL Lightning Protection Inspection Certificate certified to UL 96A. Lightning Protection Systems installation shall not void the roof warranty. Lightning Protection System provided shall include the following:

G.1.r.1 Air terminals.

G.1.r.2 Copper main and down conductors.

G.1.r.3 Ten feet long  $\frac{3}{4}$  inch copper-clad steel ground rods.

G1.r.4 Copper grounding ring around the entire facility. All connections to the ring shall be via exothermic welds (reference Section 11.5.3).

G.1.r.5 Grounding connections to all exterior metallic structures (above ground tanks, fencing, pipe racks etc.). A minimum of two rods per above ground tank and a minimum of two rods at least every 50 feet for pipe rack.

G.1.r.6 Tin plated compression type with two bolt holes approved and listed grounding lugs for bolted connections to the equipment where exothermic welds are not practical.

G.1.r.7 Designed and stamped by a Certified Lightning Protection Engineer.

G.1.s. As protection against static electricity and to prevent static charges from building up, ground and bond together all process equipment, piping, instrumentation, ductwork, air conveying lines, flexible connections, ungrounded metal in air conveying lines, chutes, motors, conductive flooring, and building. In areas where grounding straps are susceptible to damage, such as the vibratory feeders in the dewatering area, provide redundant grounding straps. Ground motors for static electricity purposes by attaching a compression lug to a motor frame mounting bolt. Static grounding is in addition to electrical equipment grounding and lighting protection; it is also in addition to what is required for grounding per NEC. Ground wires used to ground individual items in a system for static purposes only shall not be less than # 6 AWG copper unless otherwise noted (use larger than #6 AWG for bonding together process equipment, piping, and building).

G.1.t Ensure that equipment to be installed is purchased and equipped with grounding provisions (such as grounding attachment points). Field welding grounding lugs to equipment or cad welding grounding cables to equipment shall not be allowed.

G.1.u Lighting power circuits shall be designed such that a single circuit does not feed an entire area. Each circuit shall have its own neutral (no common neutrals). Provide emergency lighting per National Fire Protection Association (NFPA) 101 to ensure safe egress from the facility in the event of a power failure. Provide emergency lighting with battery power at the devices to operate the emergency lighting during power outages for a 1.5 hour minimum. The circuits for the emergency lighting shall be on emergency generator (with 1.5 hour battery power minimum is in case the emergency generator fails). Additionally, provide enough critical lighting on emergency generator over and beyond the minimum requirements of NFPA 101 to allow for the continued safe operation of process equipment on emergency generator and to provide sufficient lighting for the safe shutdown of the plant.

G.1.v Provide exit signs per NFPA 101 to ensure safe egress from the facility both with power and in the event of a power failure. Exit signs shall be illuminated light emitting diode (LED) type and shall have battery backup power to operate sign illumination during power outages for a 1.5 hour minimum. The circuits for the exit signs shall be on emergency generator (with 1.5 hour battery power minimum is in case the emergency generator fails). Exit signs shall be visible per NFPA 101 with all of the process equipment installed in the process areas. In the process areas, combination exit signs/emergency lights are not allowed. Combination exit signs/emergency lights are allowed in the Administration building, laboratory and enclosed egress stairs out of the process building.

G.1.w Provide exterior security lighting with sufficient intensity to allow recognition of unauthorized personnel or activities and allow the Closed Circuit Television (CCTV) systems to be able to display recognizable images of these intrusions. Lighting shall be installed to cover the entire perimeter of the building, with greater intensities at building entrances, and around external mounted equipment and tanks. The light fixtures shall be covered with wire mesh screen, or vandal resistant lenses, to prevent being broken by thrown objects. Light switches shall either be installed in an inaccessible enclosure or at a location not accessible to unauthorized personnel. AR 190 11 and FM 10-9-30 shall be used as a guide in deciding the security lighting requirements for the facility.

The Subcontractor shall propose the most efficient lighting solution for process areas and external lighting considering overall lifecycle costs. Lighting in critical areas shall be on the emergency generator. Lighting shall be circuited such that an area is not left in the dark when a single circuit trips. Each circuit shall have its own neutral (no common neutrals).

The process area includes wash-down requirements; all lighting fixtures in the process area shall be rated as suitable for wet locations (washdown). Lighting installed in electrically classified areas shall be suitable for the classification they are installed in and shall comply with "T" numbers as defined in the NEC.

G.1.x Nitration: The nitration area is corrosive; all lighting fixtures in the nitration area shall be National Electrical Manufacturers Association (NEMA) rated NEMA 4X.

G.1.y Dewatering: Lighting in the dewatering area should be such that there are no flat surfaces on top of the light fixtures. If NC product accumulates on top of a light fixture – or any flat surface, it will eventually dry out and has the potential to ignite.

G.1.z Stabilization: Use industrial type sealed light fixtures.

G.1.aa Avoid installing receptacles in areas that are electrically classified as hazardous. For large areas which are electrically classified such as the Cutter building, the Subcontractor shall determine requirements and procedures for installation and use of outlets. Reference NEC 503.145, requirement for receptacles and plugs.

G.1.ab In process areas, all receptacles, plugs and covers shall be watertight and insulated devices rated for use in wet locations and hose down areas. All devices shall be rated for NEMA 4X. All 120 V receptacles in wet areas shall be GFCI type.

G.1.ac Laboratory - Within the Lab area, a system of surface-mounted raceways with receptacles shall be mounted 2 inches above the lab table surfaces with receptacles every 24 inches. The receptacles shall be wired such that they are not all wired to the same circuit. The receptacles shall be duplex, NEMA 5-20R configuration, and rated for 20A at 120V, unless the testing equipment requires a different rating. Special configured/rated receptacles shall also be supplied as required for specialty lab equipment (including laboratory ovens). Provisions shall also be made for a separate raceway system to supply communication and computer related equipment within the lab and at the lab tables. The installation of the lab area receptacles shall be consistent with the electrical area classification and environment in which they are installed. The purpose of the lab is to test NC; flammables are used in the testing of NC. The laboratory will require both 120 and 220 VAC receptacles.

G.1.ad Provide full and reduced voltage starters with a Profibus interface for starting/stopping, motor current monitoring and motor or starter fault detection. Use of individual starters shall be limited to single phase, 115V, fractional HP motors, large medium voltage motors, or in cases where only one or two motors rated below 30HP are installed in a given area.

G.1.ae The general requirements for process related motors from ¼ thru 200 HP are that they be high efficiency, NEMA frame, 480 volt, 3 phase, 60 Hz motors (unless not practical for specialized equipment due to special mounting requirements). Fixed speed motors rated 200 HP or 250 HP (or up to 400 HP for motors associated with VFDs), can be 480 volt, 3 phase, 60Hz, or a higher voltage depending on available power. Fixed speed motors above 250 HP (400 HP for motors associated with VFDs) shall be 2400 volt or 4160 volt. Non-process related fractional horsepower motors may be 120 volt, single phase, 60 Hz.

G.1.af Motors controlled by VFD shall be inverter duty.

G.1.ag A lockout/Tag-Out method shall be provided for each motor through a lockable disconnect (lockable with a padlock). When locking a motor out, there shall be a means of testing or verifying that the correct motor is locked out. Push buttons shall not be used as



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devices for locking out a motor.

G.1.ah Unless otherwise noted, the support system for instrument and electrical cables shall be one of ladder type cable trays, channels, and /or rigid conduit.

G.1.ai Install only ladder-type cable trays in Nitration and the Dewatering areas; if NC can accumulate on top of the tray and its exposed cables, it can dry out and has the potential to ignite and burn the cables. In other areas, before using cable tray, evaluate its use. In highly corrosive areas such as Nitration, however, only polyvinyl chloride (PVC) coated rigid conduit or other corrosion resistant conduit shall be used.

G.1.aj Any cable installed in the nitration area must have cable suitable for use in an acid environment

G.1.ak The Subcontractor shall determine the suitability of PVC coated rigid conduit for the environment in which it is to be installed. PVC coated rigid conduit has been known to deteriorate after a period of time in certain corrosive environments. Either air will get in and destroy the conduit from the inside (inside of the conduit is generally Urethane coated; not PVC coated), or during installation the conduit gets scratched and starts the corrosion process. The Subcontractor shall, therefore, if PVC coated rigid conduit is determined to be not the most suitable material, evaluate other possible types of conduit such as fiberglass or solid PVC as an option for compatibility with the area in which it is to be installed. This evaluation shall be from corrosion as well as from a mechanical integrity viewpoint.

G.1.al Cable tray and conduits that penetrate fire-rated walls, fire-rated partitions, or fire rated floors shall be fire-stopped. Channel shall not be used to penetrate walls, partitions, or floors of any kind (fire-rated or not).

G.1.am All conduits in the process areas shall be a minimum of ¾ inch rigid conduit unless noted otherwise.

G.1.an All wiring and conductors shall be copper.

G.1.ao Both 480 volt and 120 volt power cables and wiring shall all be 600V rated. Instrument cables can be 300V rated cables. Cables in tray shall be tray rated Low voltage DC and instrument signal cables shall not be in the same tray and raceway system as the 480 volt or the 110VAC power cables. 480 volt and 110 volt power can be in the same tray as long as a divider is used; they however, shall not be in the same conduit. Instrument cables to instruments requiring intrinsic safety shall be in their own tray and conduit system and shall be identified as such. Cables to instruments requiring only a non-incendive rating do not need to be in their own tray and conduit system; they can be combined with other instrument cables to instruments in non-classified areas.

G.1.ap The minimum size for power cables and wires to motors shall be #12 AWG copper.

G.1.aq Electrical heating of piping systems shall be metallic shielded self-regulating resistance cable with outer jacket. Freeze protection for safety showers requires special considerations such that the water will not become of such a temperature as to cause burns.

G.1.ar All electrical heat tracing shall be 120VAC and shall be protected by ground fault protection devices (GFPD's) with a nominal 30 mA trip in compliance with article 427-22 of the NEC for shielded as well as non-shielded electrical heating cables (alarm only for critical lines for which continued operation is necessary for safe operation of equipment or processes).

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G1.as The GFPD's shall have an alarm contact indication breaker tripped reporting back to the control system.

G1.at Ambient temperature thermostats shall be used for freeze protection.

G1.au. Line sensing thermostats shall be used for process lines requiring maintaining higher temperatures.

G1.av Electrical heat tracing shall be powered from an electrical heat tracing panel board(s); do not mix heat tracing circuits with lighting or instrument control circuit breakers.

G1.aw The safety showers in the process area shall be identified with a blue safety light on top of the safety shower and shall alarm in the control room when activated.

G1.ax All electrical equipment, devices, and instrumentation shall be clearly identified and tagged. Nameplates and tagging shall include:

G.1.ax.1 General use safety labels.

G.1.ax.2 Arc flash warning labels with the following information included: System Voltage, Flash protection boundary, Personal Protective Equipment category, Arc Flash Incident energy value (cal/cm<sup>2</sup>); Limited, restricted, and prohibited Approach Boundaries; and Study report number and issue date.

G.1.ax.3 Short circuit rating and load information labels on panels.

G.1.ax.4 Laminated plastic nameplates for each switchboard, switchgear, panel board, equipment enclosure, motor controller, relay, and switch identifying its function, number and, when applicable, source of power and location of source of power. Provide melamine plastic nameplates, 0.125 inch (3 mm) thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be 1 inch by 2-1/2 inches (25 mm by 65 mm). Lettering shall be a minimum of 0.25 inch (6.35 mm) high normal block style.

G.1.ay Provide cable numbers on all cables (both ends) and wire numbers on all wires at their termination points.

G.1.az Tag motors with motor numbers on permanently attached stainless steel tags. Motor number shall be as on the P&IDs, power one line, and control schematics (this number on the P&IDs, power one line, and control schematics shall all be the same number).

G.1.ba Tag all control stations with the control station number, description of motor, and motor number with a laminated plastic nameplate.

G.1.bb All instruments and control devices shall have permanently attached stainless steel tags with the instrument tag numbers as shown on the P&IDs, control schematics, and instrument loop drawings (this instrument number on the P&IDs, control schematics, and loop drawings shall all be the same number).

G.1.bc. Materials, equipment and devices shall meet the requirements of Underwriters Laboratories (UL) where UL standards have been established, meet applicable Unified Facilities Guide Specifications (UFGS).

G.1.bd Sect 11.11.2.4 Motor Control Centers 480 V Power Panels - (process and building services such as HVAC)

G.1.bd.1 Voltage Ratings: Provide power panel with voltage rating of 480VAC, 60 Hz, 3-phase.

G.1.bd.2 Short Circuit Current Rating: Power panel shall be fully-rated. Series rated equipment is not acceptable. 42kA bus bar bracing minimum (higher if more fault current is available).

G.1.bd.3 Enclosure: Provide primed and painted phosphatized steel NEMA 12 enclosure, rated for the environment installed.

G.1.bd.4 Bus Bars: Tin-plated copper bus structure, copper ground bar.

G.1.bd.5 Branch Switches: Pad lockable fused disconnects

G.1.bd.6 Surge suppressors: Factory assembled and sealed TVSS units"

G.1.be. Automatic Transfer Switches: Provide transfer switches with the following requirements:

- Double throw
- Solenoid-operated
- Mechanically-held
- Rated for continuous duty"

G.1.bf Emergency Back-up Power: Provide generator(s) with the following requirements:

- Standby rated
- 480 volts, 60hz
- 3 phase, wye
- Weather-resistant enclosure
- Not intended for use in parallel with the utility
- Remote annunciator in the control room

## **G.2. Additional Communications System Requirements**

G.2.a The Administration facility contains office, conference room(s), breakroom(s), and locker room(s), which shall be designed similar to a commercial building. The Cutter, Nitration, Stabilization, and Dewatering buildings shall be designed similar to an industrial processing area with telephone communication throughout the area, at a minimum at all entrance and exit doors. The control rooms which are located in the Nitration building and receiving office in the Dewater/Packout building and the laboratory located in the Administration building will have a higher density of outlets to accommodate the needs of the users. There will be two independent data networks. The first will be for the administration functions of the building. The second will be the process and plant area controls. All public address announcements will be accomplished from the telephone handset through speakers in the base units.

G.2.b The project's facilities must connect to the installation's telecommunications (voice and data) system through the outside plant (OSP) telecommunications underground and overhead infrastructure cabling system per I3A guidance. Connection to the OSP cabling system shall be in the [REDACTED].

G.2.c Optical Fiber Cable: Provide a minimum 24 strands of single mode optical fiber cable to support LAN /DATA /VOICE applications. Terminate optical fiber cable using SC style connectors in a rack mounted optical fiber patch panel.

G.2.d There shall be a combined ER/TR located in the [REDACTED] first floor, a

TR on the third floor of the Nitration building next to the control room and a separate ER/TR in the Cutter building. In the Dewatering building receiving office, a wall mounted cabinet will be used as a TR. There will be space available in the Stabilization building if the Subcontractor deems it necessary to have a TR. Provide a minimum of two telecommunications racks in each TR. Telecommunications racks shall be standard free standing 84 inches tall by 19 inches wide with vertical and horizontal wire management. Each rack will be securely mounted to the floor.

G.2.e All walls in the ER/TR rooms shall be lined with A/C grade, 4 feet by 8 feet by  $\frac{3}{4}$  inch, fire rated plywood. There shall be a ladder type cable tray around the perimeter of the telecommunications room and from the perimeter ladder tray extend over the 19-inch communications rack(s). The ladder cable tray shall be mounted a minimum of 90 inches above the finished floor.

G.2.f Racks shall be bonded and grounded in accordance with ANSI J-STD-607-A and National Electrical Code requirements. Optical fiber cable will be terminated in an optical fiber patch panel in the uppermost part of the first rack.

G.2.g Provide a basket-style cable tray utilizing trapeze or wall-mounted cantilever brackets to serve the horizontal pathways. The cable tray shall be designed to support Category 6 UTP, horizontal optical fiber, and coaxial cabling to work area outlets. All work area outlets will be served with 1-inch EMT conduit from the cable tray to the outlet box. Outlet boxes will be 4  $\frac{11}{16}$  inches square by 2  $\frac{1}{2}$  inches deep with a single gang reducing ring. All of the pathway for the communications system(s) shall be installed according to the classification of the space where it will be installed.

G.2.h Provide a minimum of 24-strands single mode and 12-strand multi-mode optical fiber cables between ER and TRs. Terminate all optical cables on a patch panel, mounted on a telecommunications rack. Terminate cables with SC style connectors at the building service entrance and SC style connectors at building distribution patch panels

G.2.i Enclosures in the Nitration, Dewatering areas shall be NEMA 12. In acidic environments, utilize stainless steel enclosures.

G.2.j All building shall be pre-wired for voice, data and CATV systems. All voice and data cabling shall be plenum rated Category 6 UTP cable terminated on 8 position/8 contact (8P/8C) Category 6 jacks at outlet locations and on 8P/8C Category 6 patch panels located in the Telecommunications room. Category 6 modular jacks shall terminate using T-568A standard.

G.2.j.1 Office areas shall be prewired with a minimum of two outlets one each on opposite walls. Each outlet will have two category 6 UTP cables.

G.2.j.2 Control room and laboratory will be prewired with higher density of outlets based on the customer final requirements.

G.2.j.3 Wall phones will be prewired with one voice category 6 cable terminated on a wall phone plate. They will be located throughout the plant every 500 square feet and at all entrance and exit doorways. All wall phones in unrated areas with the process area will require a NEMA 12 enclosure; otherwise, enclosures shall comply with the electrical classification of the area in which it is installed.

G.2.k There is no requirement for data communication in the Nitration, Stabilization and Dewatering areas, other than the control room on the third floor of the Nitration building and systems associated with the Packout System.



[illegible]

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[REDACTED]

[REDACTED]

G.3.f [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**H. Instrumentation and Controls Systems Engineering, Design, and Construction**

Subcontractor is responsible for the following instrumentation and controls systems detailed engineering and design:

- Reference documents in APPENDIX I.
- Identify instrumentation items shown on the P&ID's, vendor drawings and documentation.
- Prepare specifications, drawings and all other documentation required for the devices to be purchased.
- Provide construction drawings and any other documentation require for use to install, cable, tubing.
- Instrument Index, List and Specification Sheets,
- Control Valve and Flowmeter Sizing Calculations
- Water Hammer Calculations for Automated Valves
- Junction Box Connection Diagrams
- Instrument Location Plan Drawings (incl. J-Box & panel locations)
- Loop Sheets (in customer format showing PLC and J-Box terminations, cabling and P&ID Logic)
- Instrument Installation Specification (including tube and fittings, brackets and supports and tagging)
- Instrument Installation Details
- Instrument Construction Specification
- Control Room Equipment Layout Plan in conjunction with BAE Systems
- Specifications for Testing, Commissioning and Startup Plans (including Testing Procedures for All Instrumentation)

**Note: The Majority of Controls Programming-Related Works Are By Others (MC Dean). EPC Subcontractor Interfaces and background I&C information are provided below:**

1. MC Dean will design, fabricate and test the I/O and DCS Panels. Subcontractor shall install, terminate and test I/O and DCS panels. This includes field instrument cabling and junction boxes.
2. BAE has prepared I/O database and I/O assignments (MIL file), MC Dean has designed and will fabricate according to this. Subcontractor shall use this information for installation and termination per MC Dean panel drawings. Subcontractor shall verify the MIL file and panel drawings against P&IDs and will prepare loop diagrams.
3. The following information is applicable to M.C. Dean and the Subcontractor: Panels with DCS processors, for the main process areas, shall be installed in the air conditioned computer room. I/O panels shall be located in the electrical rooms to the extent practical. The DCS processor and DCS I/O panels located in the control room and MCC rooms shall be freestanding NEMA 12 panels modified with fan and filter or A/C unit (as required – based on heat load). I/O panels in areas not classified as hazardous, which cannot be located in the electrical rooms shall be NEMA 4X and purged to protect the

electrical components from the environment in which it is installed. Panels with programmable logic controller (PLC) processors which serve specific equipment such as product pack out equipment can be installed locally with its I/O by the equipment it serves, provided it is not in an area classified as hazardous. In case this cannot be accommodated, for any panel which has to be placed in a classified area, because there is no other practical place to install it, Subcontractor shall evaluate and develop a proper design for the panel and its installation which is suitable for the area (dust tight, purged and similar and installed in such an area in which only a moderate accumulations of lint or flyings will be likely to collect in the vicinity of the panel, and where such panel is readily accessible for routine cleaning).

4. M.C. Dean is designing the DCS I/O panels such that all field I/O wiring terminates to panel terminals (not directly to the I/O terminals). Control power shall be distributed throughout the panel through fuses.
5. The NOx system has not yet been designed but the associated I/O panels will require coordination by the Subcontractor.
6. The vendor supplied cellulose cutting and weighing and packout systems have standalone instrumentation systems that will require the subcontractor to install, terminate and test. In addition, these systems will have a limited interface through I/O panels to the plant PLC system that the Subcontractor is required to install.
7. Subcontractor shall provide 120VAC to PLC and I/O panels (as shown on panel drawings) and cable 24VDC or Profibus to field instrumentation.
8. M.C. Dean has developed Architecture drawings for Train 1 and the Safety PLC and is in the process of developing the Train 2 architecture. The subcontractor shall install and provide power to all panels, interconnecting cabling (Fiber, Ethernet, profibus etc.)
9. "Fail-Safe" Design (Provided for information only): The control system, limit switches, photo-cells, interlocks, alarms, etc. shall be set up – designed "fail-safe" de-energized to trip unless noted otherwise. Fail safe on loss of power, pneumatic or hydraulic power. Examples are, control valves generally fail closed (provided that no flow is the safe condition), temperature transmitters have high temperature burnout, and high level switches on high level de-energizes the control circuit.
10. Instrument Wiring Practices: The cabling philosophy shall consist of junction boxes, cable home runs, and I/O panels. If the I/O panels are in the vicinity of the process devices, the junction boxes and cable home runs are not required. I/O panels should not be installed in electrically classified or corrosive environments; if this is not practical, they shall be NEMA 4X purged panels. The preferred location for the I/O panels is to install them in protected areas such as I/O rooms or in the electrical rooms separated from the electrical equipment.
11. If an instrument has a process connection connected to a hazardous process line, its conduit cannot be routed directly from the instrument to a panel, junction box, or a manned area; its conduit shall have a discontinuity in it or other means to prevent the migration of the hazardous process material. When an instrument connected to a hazardous process line has a failure such as a diaphragm or O-ring failure or corrodes, a seal-off in the conduit is not sufficient to stop the process material from being transmitted through the conduit (seal-offs are not intended to be under process pressure).
12. Product Tracking, Remote Access, and Data Historian Requirements (Provided for information only): For requirements of product tracking and remote access to process data see M.C. Dean "Statement of Work".
13. Programming Simulation and Acceptance Testing: The programming provided by M.C. Dean shall be fully simulated and tested before being installed on site. As a minimum,

this testing shall consist of the control system's servers, controllers, screens, and a software simulation of the process to simulate I/O responses. An acceptance test performed by the M.C. Dean and witnessed by BAE Systems is required to demonstrate that this testing has been successfully accomplished. The simulation of the process (hardware, software, and programming of a process simulation independent of the control system) to be used with the checkout and acceptance testing of the DCS and SIS programming, is also to be used for operator training.

14. Process Safety Interlocks Definitions: Non critical interlocks (or process actions) set the limits of the process to keep the process under control; process actions are part of the process control system. Critical interlocks are a second level of protection to prevent hazardous releases, death or permanent disability, catastrophic failure, loss of property, and losses of production; critical interlocks shall function independently from the process control system.
15. Interlock Implementation (Provided for information only): Critical interlocks shall be in an interlock system, a system referred to as a "Safety Instrumented System" (SIS), which shall be separate from the control system and conform to the specific requirements of American National Standards Institute/International Society of Automation (ANSI/ISA) 84.00.01 2004 (IEC 61511) "Safety Instrumented Systems for the Process Industry Sector". Safety functions shall be allocated to the SIS. Separate and independent sensors are generally required and depending on the severity of its classification, redundancy is required.
16. Safety Integrity Level (SIL) (Provided for information only): Included with these specifications are lists of preliminary interlocks (reference the Process Control Description of APPENDIX I, Section 2); the M.C. Dean shall further develop the interlocks and classify process events into categories of severity of incident and implement interlocks accordingly. M.C. Dean shall conduct a SIL evaluation under the supervision of a Certified Functional Safety Professional (CFSP) or Certified Functional Safety Expert (CFSE) to determine SIL Levels. Use the P&IDs interlock listings included in the process control descriptions as a basis. Classification and implementation shall be consistent with the guidelines of ANSI/ISA 84. Before proceeding with design, provide and submit for approval the completed interlock list and how each interlock is to be implemented.
17. Added Redundancy (Provided for information only): M.C. Dean shall review/evaluate the controls shown on the P&IDs to verify areas where additional redundancies are needed (such as hardwired interlocks or SIS backup (separate level switch for interlock as a backup to the level transmitter). Critical process steps, which are not already set up by design to prevent out-of sequence operation, shall be redundantly interlocked with SIS system backup to prevent out-of sequence operation (such as deflaking before pressure boiling, post boiling before refining, and similar steps).
18. BAE Systems will develop and incorporate a safety strategy for controlling motor starters and frequency drives consistent with the requirements of the SIS. The I/O list shows the motor starters and frequency drives on PROFIBUS; drives and motor starters associated with the SIS, will need additional considerations such as PROFIBUS with PROFIsafe profile, frequency drives and controllers with integrated safety technology, a separate hard wired drive enable signal, and/or redundant output contactors and similar elements of the work.
19. Interlock Test Procedures: BAE Systems shall provide a written test procedure for all interlocks; include how often specific interlocks shall be tested. If the design of testing an interlock calls for a bypass, then separate bypass alarms are required.



### H.1 Specifics for Instrumentation and Controls Works

Subcontractor is responsible for engineering, design, supply, calibration, installation, performing pneumatic tests (soap or snoop tests), performing loop checks, including mounting and supporting instruments, tube and conduit runs. Works include welding, brazing, setting and fabricating instruments stands and other elements of the work. Note that the controls architecture and related elements are in another subcontractor's statement of work as noted above.

### H.2 Additional Instrumentation and Controls System Requirements

Subcontractor will develop specifications for the instrumentation and controls systems works, as a minimum, in accordance with the related UFC/UFGS specifications at the [www.wbdg.org](http://www.wbdg.org) as applicable, along with preparing related installation procedures. Specification references for instrumentation and controls systems components include APPENDIX A: General Technical Requirements, APPENDIX G: Existing Technical Documentation (including LEC specifications), PIP standards and specifics given below:

Instrument design shall be in accordance with general acceptable industrial practices for the chemical industry. Instruments shall be suitable for an industrial environment and the physical, process, ambient, and electrical conditions in which they operate. For ease of maintenance, instrumentation shall be selected with a philosophy of common spares and shall be available and serviceable by local suppliers. Materials of construction for instruments shall meet or exceed the piping specification requirements. Pressure and temperature ratings for instruments, if practical, shall meet or exceed the piping specifications; but if not practical, such as a 30 PSIG pressure gauge on a 150 LBS class piping system for example, shall at a minimum be as great as the process conditions including abnormal upset conditions such as burst pressure of a rupture disk for example. Instrument and electrical devices mounted outside shall meet a combination of both the annual minimum and maximum ambient temperatures as well as the process temperatures in which they are installed.

H.2.a (Provided for information only) The main process control system shall be a distributed control system (DCS) with a separate safety related controller for the safety instrumented system (SIS). The operator interface to the DCS and SIS shall be from human machine interface (HMI) terminals located in the main control room. All alarms and interlocks shall provide a "First-Out" indication on the HMI terminals.

H.2.b. (Provided for information only) All alarms and interlocks shall provide a "First-Out" indication on the HMI terminals.

H.2.c Standalone subsystems (roll cutters, bale breaker, packout conveyor/weigh systems, NOx abatement) shall be controlled by dedicated controllers with local operator interfaces. These systems shall communicate with the DCS via Profibus."

H.2.d The DCS servers, controllers, and HMIs for the process shall all be located in the main control room. The operator controls for the cutter area shall be located in the Cutter building by the cutter equipment and the controls for the packout area shall be located in the dewatering area by the packout equipment and/or receiving office.

H.2.e Control rooms within the process building shall have positive pressure.

H.2.f Panels with DCS processors, for the main process areas, shall be installed in an air conditioned computer room type of space. The DCS processor and I/O panels shall be located in the electrical rooms to the extent practical. The DCS processor and DCS I/O

panels located in the control room and MCC rooms shall be freestanding NEMA 12 panels modified with fan and filter or A/C unit (as required – based on heat load). I/O panels in areas not classified as hazardous, which cannot be located in the electrical rooms shall be NEMA 4X and purged to protect the electrical components from the environment it is installed in.

H.2.g Panels with programmable logic controller (PLC) processors which serve specific equipment such as product packout equipment can be installed locally with its I/O by the equipment it serves, provided it is not in an area classified as hazardous. In case this cannot be accommodated, for any panel which has to be placed in a classified area, because there is no other practical place to install it, the Subcontractor shall evaluate and develop a proper design for the panel and its installation which is suitable for the area (dust tight, purged and similar requirements and installed in such an area in which only a moderate accumulations of lint or flyings will be likely to collect in the vicinity of the panel, and where such panel is readily accessible for routine cleaning).

H.2.h Design the DCS I/O panels such that all field I/O wiring terminates to panel terminals (not directly to the I/O terminals). Control power shall be distributed throughout the panel through fuses.

H.2.i The control voltage for the discrete controls shall be 24VDC.

H.2.j Instrument signals shall be 4-20mA.

H.2.k All thermocouple terminals shall be of the same metal composition as the thermocouple leads. Use RTDs for temperature sensors used for control (RTD's are more accurate than thermocouples at temperatures below 400 degrees F – which will be the case for this process).

H.2.l The control system, limit switches, photo cells, interlocks; alarms, etc. shall be set up – designed “fail-safe” de-energized to trip unless noted otherwise. Fail safe on loss of power, pneumatic or hydraulic power is required. Examples are, control valves generally fail closed (provided that no flow is the safe condition), temperature transmitters have high temperature burnout, and high level switches on high level de-energizes the control circuit.

H.2.m I/O panels should not be installed in electrically classified or corrosive environments; if this is not practical, they shall be NEMA 4X purged panels (see section 12.3.9 for details). The preferred location for the I/O panels is to install them in protected areas such as I/O rooms or in the electrical rooms separated from the electrical equipment.

H.2.n If an instrument has a process connection connected to a hazardous process line, its conduit cannot be routed directly from the instrument to a panel, junction box, or a manned area; its conduit shall have a discontinuity in it or other means to prevent the migration of the hazardous process material. When an instrument connected to a hazardous process line has a failure such as a diaphragm or O-ring failure or corrodes, a seal-off in the conduit is not sufficient to stop the process material from being transmitted through the conduit (seal-offs are not intended to be under process pressure).

H.2.o (Provided for information only) Critical interlocks shall be in an interlock system, a system referred to as a “Safety Instrumented System” (SIS), which shall be separate from the control system and conform to the specific requirements of American National Standards Institute/International Society of Automation (ANSI/ISA) 84.00.01-2004 (IEC

61511) "Safety Instrumented Systems for the Process Industry Sector". Safety functions shall be allocated to the SIS. Separate and independent sensors are generally required and depending on the severity of its classification, redundancy is required."

H.2.p (Provided for information only) Critical process steps, which are not already set up by design to prevent out of sequence operation, shall be redundantly interlocked with SIS system backup to prevent out of sequence operation (e.g. deflaking before pressure boiling, post boiling before refining, etc.).

H.2.q (Provided for information only) The mass balance as provided by the technology supplier shows all process conditions in metric units. The NC process displays shall show in US units; units of measure shall be converted for flow, level, pressure, and similar by the subcontractor creating the displays.

H.2.r Instrument design shall be in accordance with general acceptable industrial practices for the chemical industry. Instruments shall be suitable for an industrial environment and the physical, process, ambient, and electrical conditions in which they operate. For ease of maintenance, instrumentation shall be selected with a philosophy of common spares and shall be available and serviceable by local suppliers. Materials of construction for instruments shall meet or exceed the piping specification requirements. Pressure and temperature ratings for instruments, if practical, shall meet or exceed the piping specifications; but if not practical, such as a 30 PSIG pressure gauge on a 150 LBS class piping system for example, shall at a minimum be as great as the process conditions including abnormal upset conditions such as burst pressure of a rupture disk for example. Instrument and electrical devices mounted outside shall meet a combination of both the annual minimum and maximum ambient temperatures as well as the process temperatures in which they are installed.

H.2.s Electronic transmitters, when readily available as an option, shall include local indicators calibrated in the same engineering units as the process control system. Electronic transmitters, such as magnetic flow meters, pressure transmitters, level transmitters, and similar, and control valves shall generally be provided as ""smart"" instruments with ""HART"" compliant protocol and operate with 4-20 mADC powered by 24 VDC (temperature transmitters can be 4-20mADC without being "HART" compliant). Fisher smart valves, for example, shall be supplied with SD version (standard diagnostics) positioners. Multivariable transmitters (that is, mass flow meters) and package systems (i.e. Ktron weighbelt feeders) shall be Profibus DP (Decentralized Peripherals) or PA (Process Automation) compatible. At the subcontractor's discretion, additional instrumentation can also be furnished with Profibus communications instead of the 4 20 mADC "HART".

H.2.t Unless not suitable due to electrical area classification requirements, field instrumentation (transmitters, pressure switches, limit switches, solenoids, and similar) shall be in National Electrical Manufacturers Association (NEMA) rated NEMA 4 enclosures (NEMA 4X for corrosive and wash down areas). Hermetically sealed contacts are preferred; and local instrument panels and junction boxes can be NEMA 4, NEMA 4X or NEMA 12 (NEMA 4 if outside; NEMA 4X for corrosive environments and areas that may require washdown).

H.2.u Instrumentation installed in classified hazardous areas shall have enclosures which are listed by Underwriters Laboratories (UL), Factory Mutual (FM) or other nationally recognized testing authority for use in the hazardous area encountered.

H.2.v Capillaries for process diaphragms shall be stainless steel with helical stainless steel

armor. An outer polyvinyl chloride (PVC) coating shall be considered on a case by case basis. The capillaries shall be installed and secured in tube track. If the capillary is in a corrosive environment, the tube track shall be PVC coated and shall be mounted with stainless steel brackets.

H.2.w Pneumatic instruments such as control valves shall be provided with a filter regulator with output gauge. On-off cylinder or piston operated valves shall be specified to operate at full instrument air supply (IAS) line pressure. A lubricator shall be specified if recommended by the manufacturer. Air dryers with coalescing filters shall be installed where plant air enters a process area; existing plant air is dirty, wet, and oily.

H.2.x Instruments requiring 120VAC or 24VDC instrument power (4-wire transmitters; not loop powered instruments) shall have a means to isolate the power for maintenance purposes - power plug, fused terminal, or circuit breaker.

H.2.y All instruments shall have stainless steel identification tags permanently attached with its Instrument Tag Numbers shown on the P&ID's. Instruments associated with interlocks shall have a stainless steel tag identify the interlock number and class.

H.2.z Instruments and installation materials shall be new and shall be manufactured of material suitable for the process and environmental conditions. Instruments containing asbestos or mercury shall not be used.

H.2.aa Enclosure purging for panels and junction boxes to meet electrical area classification shall be minimized; if at all possible, panels or junction boxes shall be installed in a safe area. Enclosure purging for small electrical devices and components to meet area classification is not allowed. For larger enclosures, such as panels and junction boxes, enclosure purging is preferred over explosion-proof enclosures (cumbersome explosion proof covers when not properly re-installed during maintenance do not protect from initiation of explosion). Remote Input and Output (RIO) panels may be NEMA 4X purged enclosures to mitigate the effects of a corrosive environment on the electronics (I/O modules, and similar).

H.2.ab Instrumentation with nuclear sources is to be avoided.

H.2.ac With the Nitrocellulose process being an energetic materials process, certain safety considerations for its design and installation shall be adhered to. This includes key items such items as the following:

- All bolts and nuts that could potentially fall into a process unit shall be secured.
- A design and installation which prevents NC from being able to accumulate in inaccessible or dead spaces such as instrument pipe stands.
- No threaded metal-to-metal connections in services containing energetic materials (instrument mounting connections shall utilize gasketed flange connections).
- All chemicals, materials, adhesives, and similar shall be tested for process compatibility before allowed to enter the facility.

H.2.ad In the Nitration area, there shall be mono-nitrogen oxides (NO<sub>x</sub>) detection monitors on each floor. Sensors shall be of the electrochemical or absorptive IR type. Locations shall be determined based on the most likely accumulation of gases. Each monitor shall be equipped with local audible alarm as well as a beacon indicator to be actuated upon detection. The alarm tone and beacon shall be distinctly different from all other audible alarms and beacons.

H.2.ae Dry contacts or Profibus I/O from each monitor shall be wired to the process control system for alarm purposes utilizing traditional failsafe practices and with signals at warning and alarm concentrations. Sensor locations as well as warning and alarm concentration limits are to be determined by the most stringent of the current best practices recommended by the following organizations and finalized in the Hazard and Operability Analysis (HAZOP) during detail design.

H.2.af The material of construction, pressure rating, and process connections of the in-line instruments shall be equal to or greater than that required by the associated piping specifications.

H.2.ag Critical flow meters and control valves which cannot be taken out of service and replaced without taking a shutdown of the process, shall be installed with block valves and a bypass.

H.2.ah Each instrument requiring a process sensing connecting to a vessel or pipe, shall have its own connection; do not share process connections with a piping tee to two different instruments.

H.2.ai Provide dual block valves and a bleed valve to isolate instruments that are connected to the process acid piping. A single block valve is sufficient to isolate instruments that are connected to non-acid carrying pipes.

H.2.aj Instruments in non hazardous service where remote mounting of pressure and differential pressure instruments is required (except for lethal, toxic or hazardous, or in 275 PSIG steam service and above) the process tubing lines shall be seamless tubing, ½ inch outside diameter. Process tubing shall be 316 SS minimum. The tubing shall be secured at intervals of no greater than 3 foot. Tubing shall be sloped at a minimum rate of 1 inch per foot to/from the pressure or differential pressure device. If tubing is to span in open air, then it shall be installed in tube track or angle support. Process tubing shall be by Swagelock or Parker Hannifin (Swagelock is the preferred vendor).

H.2.ak Instruments in hazardous service where remote mounting of pressure and differential pressure instruments is required for lethal, toxic or hazardous, and for 275 PSIG steam service and above, the process sensing lines shall conform to the piping specifications unless the pipe material is carbon steel; if carbon steel, sensing lines shall be ½ inch NPS, schedule 80 seamless carbon steel pipe with forged 3,000 pound socket weld fittings.

H.2.al. Electronic signal transmission is preferred; pneumatic transmission is to be avoided.

H.2.am Provide block, bleed, and pressure connection to accomplish the testing and field verification of instruments.

#### H.2.am Control Valves

- Control valve noise level shall not exceed 85 dB at 3 feet under any of the specified flow conditions. Control valves shall be furnished with valve positioners (integral with I/P if within temperature limits). Actuators shall fail to the safe state in the event of loss of air or electrical signal.
- Body material shall normally be carbon steel or stainless steel, as required by the application.
- Cast or ductile iron shall not be used. Minimum control valve size shall be 1 inch; if smaller sizes are required, reduced trim shall be used. 1 1/4, 2 1/2 and 5 inch



sizes shall not be used.

- All 1 inch and larger control valves shall be flanged, socket welded, or butt welded; slip on flanges are prohibited.
- Equal percentage stainless steel valve trim shall generally be used, but the selected characteristic shall be suitable for the process. For corrosive services, other materials and/or linings shall be considered and defined as specialty valve trims.
- Brass, copper, or copper bearing alloys shall not be used for any service. Teflon V Ring packing shall be used for temperatures of 40 degrees C to +175 degrees C. Grafoil packing should be used for temperatures above 175 degrees C.
- Rotary valves are preferred where process conditions permit their application.
- All accessories shall be Stainless Steel where available or a suitable corrosion resistant material shall be selected. All tubing on valves shall be seamless 316 SS. Tube fittings shall be stainless steel compression fittings by Swagelok or Parker Hannifin. Filter regulators shall be supplied from an approved supplier in the Preferred Instrumentation Vendor List.

#### H.2.an On/Off Valves

Shutdown valves shall have "fail-safe" actuators (spring return actuators). Actuators on valves which are not required for shutdown can have double acting actuators and fail in their last position. Limit switches shall be proximity type switches with ½ inch national pipe thread (NPT) electrical connections. Hermetically sealed micro switches housed in acid resistant housing are also acceptable. Shutdown valves specified as ""Fire Safe"" shall meet the requirements of API 607. All accessories shall be Stainless Steel where available or a suitable corrosion resistant material shall be selected. All tubing on valves shall be seamless 316 SS. Tube fittings shall be stainless steel compression fittings by Swagelok or Parker Hannifin. Filter regulators and solenoids shall be supplied by a BAE Systems approved supplier. All solenoid valves shall be suitable for service in the specified electrical area classification without the use of barriers. Solenoid valves shall be complete with suppression diodes. Coils shall be continuous duty encapsulated coils with Class H insulation. Solenoid valves shall be specified with low current coils for maximum uninterruptible power supply (UPS) life on power failure.

#### H.2.ao Water Hammer

Automated valves throughout the plant operations shall be designed such that the valve's stroking speed, especially the last quarter turn of the closing of a valve, does not cause water hammer. Valves which slam shut and create water hammer in an energetic material can result in initiation of the energetic material. Subcontractor shall provide water hammer calculations and limit the rate of operation for automatic valves (stroking speed).

#### H.2.ap Flow Transmitters

Process flows shall be measured by differential pressure type flow elements, magnetic flowmeters, turbine flowmeters, ultrasonic flowmeters, vortex flowmeters, or Coriolis flowmeters as defined in the instrument specifications. Calculations for all flow devices shall be provided showing the sizing basis. Four-wire transmitters shall be powered by 24 VDC rather than 120 VAC when possible.

#### H.2.aq Pressure Transmitters

Pressure and differential pressure transmitters, unless process conditions require

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otherwise, shall have 316 Stainless Steel wetted parts, ½ inch NPT process connection, and be furnished with 316 Stainless Steel bolts and Teflon gaskets. Pressure transmitters with remote diaphragm seals shall be factory pre-assembled and filled by the transmitter manufacturer. They shall have flanged process connections. If required, install flushing rings.

#### H.2.ar Pressure Gauges

Pressure Gauges shall be 4-1/2 inch dial, solid front safety case type with blowout back, ½ inch NPT bottom connection, phenolic or drawn stainless steel case, 316 SS bourdon and socket (unless process conditions require otherwise), stainless steel movement, micrometer pointer. Dials shall be plastic or aluminum, white with black figures. 316 SS pulsation dampeners shall be provided for pulsating pressure services. Filled gauges shall not be used. A siphon shall be provided for all gauges in steam service. Pressure gauges with chemical seals shall be factory pre assembled and filled by the gauge manufacturer. The seal shall have a ½ inch female national pipe thread (FNPT) gauge connection with a flanged process piping connection in accordance with the piping or vessel trim specifications. Flushing rings shall be provided as appropriate for the process conditions. Pressure gauges shall be scaled such that the normal operating pressure falls between 50 and 70 percent of full scale if practical; full scale, however, shall be such that the gauge's calibration is not affected when subjected to maximum process conditions.

#### H.2.as Pressure Switches

Pressure switches installed shall be capable of sensing full line pressure without damage or affecting calibration. Dedicated switches shall be provided for all shutdowns. Hermetically sealed, dual Form C contacts shall be supplied on all field mounted pressure switches. Electrical leads on factory sealed switches shall be at least 18 inches long and labeled to identify normally open, normally closed, and common leads. For low pressure applications where dual Form C contacts are unavailable, or where a dual Form C switch unit would produce an unacceptably wide dead band, a single Form C switch may be used.

#### H.2.at Temperature Indicators and Thermowells

All local temperature indicators, resistance temperature detectors (RTDs) and thermocouples shall be provided with thermowells for all process temperature measurements unless otherwise noted. Thermowells are not required where temperature elements can be safely removed such as in rotating equipment bearings. Thermowell immersion length (not "U" dimension) shall generally be to the center of the pipe or 6 inches into the pipe, whichever is shorter. The immersion length (not "U" dimension) for the purposes of this discussion is the distance into the process stream from the inside edge of the pipe, or inside wall of a tank, to the tip of the thermowell. Where thermowells are installed in lines smaller than 3 inch, the piping shall be expanded to 3 inch in size, or for small lines (2 inch or less) a 2 inch pipe tee can be used to accommodate the thermowell. Standard thermowells shall be used. Temperature sensors used for control shall be RTDs (RTD's are more accurate than thermocouples at temperatures below 400 degrees F which is the case for this process).

#### H.2.au Temperature Transmitters

Temperature transmitters shall typically be configured for upscale burnout indication for heating applications. Burnout protection must be configured to a "safe" condition. For temperature transmitters used as temperature interlocks, the temperature transmitter's

calibration span shall cover start-up, normal-operating, and extreme-operating upset conditions (e.g. 0 to 350 degrees C). Process conditions may require a narrow precision span for the temperature transmitter used for control. Both the temperature transmitters used for interlocks as well as the ones used for control shall be displayed.

#### H.2.av Level Transmitters

Level shall be measured by differential pressure, displacer type, wave guided radar, or ultrasonic as defined in the instrument specifications. Differential pressure level transmitters are the preferred devices for level measurement.

#### H.2.aw Pressure Transmitters

Differential pressure transmitters may be direct flanged type for slurries and other difficult services where plugging may occur, or, if easily accessible, close connected to the lower process tap. Standard process connection size for flanged type differential pressure transmitters shall be 3 inches. Where transmitters are applied on pressure vessels, a reference leg shall be utilized. Where an isolation valve is provided for a flange mounted differential pressure level transmitter, a bleed ring with bleed valve shall be provided between the isolation valve and transmitter. Flushing bleed rings shall be installed as required. Isolation valve, flushing bleed rings and diaphragm seals all shall be 3 inches in diameter. Where remote diaphragm seals are required on a differential pressure level transmitter, the seals shall be flush flanged seals. The capillary tube shall be the minimum length required and transmitter and diaphragm must be filled at the manufacturer's factory. Capillaries shall be stainless steel with flexible stainless steel armor.

#### H.2.ax Level Switches

Depending on the application, several types of level switches are acceptable. These include external cage displacer or float type, ultrasonic, vibrating type, capacitance, radio frequency or microwave. Reference the instrument specifications of APPENDIX I for type of switches to use.

#### H.2.ay Pressure Regulators

Pressure regulators shall be the self-contained type, with internal or external pressure sensing when the process, environmental, or hygiene regulations permit. For example, Process Safety Management (PSM) fluids like NH<sub>3</sub> cannot be vented to the atmosphere. Most self-contained regulators vent to atmosphere. Body material shall normally be carbon steel or stainless steel, as required by the application. Cast or ductile iron shall not be used. Regulators in process service shall generally be flanged. If piping specifications permit, regulators may have screwed connections in 150 LB ANSI service. Flanged connections shall be provided for Class 300 or higher pressure ratings. Purge or blanket regulators that are in flanged piping specifications, but normally have air or nitrogen flowing through them may have screwed connections. Regulators shall be sized to minimize pressure offset. There shall be no more than 10% offset at design flow rate. Regulator wetted parts shall be compatible with process fluids. Pressure gauges shall be provided downstream of all pressure regulators to permit set point verification and adjustment.

#### H.2.az Pressure Relief Valves and Rupture Disks

Pressure relief shall be provided where required to protect equipment, vessels, tanks and piping from over-pressure due to process anomalies, equipment failure, fire

conditions or thermal expansion. Valves provided strictly for thermal expansion (thermal relief valves) due to radiant heat shall be  $\frac{3}{4}$  inch by 1 inch. Screwed connections are acceptable only for thermal relief valves in 150 Lb. ANSI service and the process fluid is water, and for hydro-relief in non-process support system services. Pressure ratings for flanged relief valves shall be that of the mating flange at the valve inlet. Safety and relief valve application requirements shall be in strict compliance with ASME Pressure Vessel Code Section 1 (Fired Pressure Vessels) or ASME Pressure Vessel Code Section VIII as is applicable. Valve sizing shall be in strict accordance with API RP 520. Any valve discharging into any type of a closed system shall be the balanced bellows type. Only those valves discharging to atmosphere which have no developed back pressure may be conventional non-bellows type. The bonnet and cap material for bellows type relief valves shall be carbon steel as a minimum (no cast iron). For pressure relief valves associated with the process equipment including its piping, use only pressure relief valves which are manufactured and tested in accordance with ASME Pressure Vessel Code, Section VIII and capacities which are certified by the National Board of Boiler and Pressure Vessel Inspectors (adherence to ASME standards will assure a high level of quality). The manufacture shall have a current ASME Code stamp for relief valves. Any valve provided for the purpose of pressure vessel pressure relief shall carry an ASME Code Stamp if the vessel is ASME Code Stamped. Safety and relief valves in nitrogen service shall have Viton soft seats. Lifting levers shall be provided on all relief valves used in air, steam service and hot water over 140 degrees F. Lifting levers are not acceptable for other relief valves. Consideration must be given to the nature of the process (steady or pulsating), and the process temperature. Certain pumps and compressors are considered pulsating loads. It is most desirable to have the relieving device's set-point as far as reasonable from the process operating pressure.

- Sizing calculations shall be performed on all possible contingencies, with the largest area required determining the valve size. . Once the required area has been determined, the standard rupture disk.
- The Pressure Boiler Vents, for example shall account for a runaway reaction (such as decomposition reaction)
- Safety-Relief Valves: The predominant valve for pressure relief shall be the valve categorized by the manufacturer as a "safety-relief" valve, that is, that valve designed for either hydro or gas/vapor service. This shall be an ASME Code Stamped valve. These valves shall have closed bonnets (vented for bellows), screwed caps, lifting levers as required by the Code and absolutely no test gags. Valve body material shall be consistent with applicable piping specifications. Valve trim, including bellows, shall be as a minimum stainless steel. Area of discharge shall be not less than four times the orifice area.
- Safety Valves: These valves are the manufacturer's valves that are designed strictly for ASME Section I application. These valves shall only be utilized in fired pressure vessel service.
- Relief Valves: These valves are the manufacturer's valves that are designed strictly for hydro relief or thermal relief and are not normally Code stamped. These valves shall only be used for liquid thermal relief or non-process support system liquid relief.
- Pilot Operated Relief Valves: Pilot operated relief valves shall only be considered where light gasses at high set pressures are encountered, or where operating pressures are close to set pressures. Because the design of some pilot operated

valves vent to the atmosphere; written approval is required before using pilot operated relief valves.

- Do not install a pressure relief valve type in an application for which it is not intended.
- Wherever practical, use full nozzle instead of semi-nozzle pressure relief valves (full nozzle is the most common configuration for ASME Section VIII valves). With full nozzle valves, the inlet connection (raised face of flange or inlet threads) is incorporated into the nozzle allowing the valve body and outlet to be of a different material from its process connection. This allows, for example, a valve requiring a stainless steel process connection to have a carbon steel body and outlet as may be allowed by the piping specification. To avoid operating problems and possible damage to valve seats, the maximum required operating pressure of a pressure relief valve shall not be greater than 90 percent of its set pressure (this shall be adhered to even-though, some valve manufacturers claim a possible maximum valve operating pressure of up to 95 percent with soft seated valves)
- Non-fragmenting rupture discs shall be used. Rupture disc holders shall be used in place of rupture discs clamped between piping flanges. Jack screws are required. Rupture disc holder flange ratings shall match that of relief valve flanges if disc holders are bolted directly to relief valves; otherwise, their flange ratings shall be per piping specifications.
- Whenever a rupture disc is required under a relief valve, a telltale assembly consisting of a pressure gauge and excess flow valve shall be provided between the rupture disc and the relief valve.
- Rupture discs in process systems and utility type services shall meet API and all other industry standards. Bursting pressure of the disc, corrected for temperature shall not exceed the maximum allowable working pressure (MAWP) of the protected system.

#### H.2.ba Instrument Installation

The installation shall be such that Nitrocellulose material (NC) cannot enter void spaces. NC, due to a leak and/or as a cause of wash-down of spilled material, if it becomes trapped has the potential to cause an explosion as it dries out.

- Mounting
  - Remote mounted instruments shall not be mounted on handrails or piping. Remote mounted instruments shall be mounted such that they will not interfere with normal personnel movement and shall be accessible for maintenance. In general, instruments and their accessories shall be easily accessible from grade or a permanent platform.
- Impulse Lines
  - Instruments in steam and liquid services, except for close coupled pressure gauges, shall be located below their process connection point; their impulse lines shall slope down to the instrument with a minimum slope of one inch per foot. Instruments in gas or vapor service shall be located above their process connection point; their impulse lines shall slope up to the instrument with a minimum slope of one inch per foot.
- Mounting Height
  - Field indicating instruments shall be mounted such that their scale is not more than 5'0" or less than 3'0" above grade or platform and shall be located as



near as possible to the primary connection consistent with instrument accessibility.

- Instrument Supports
  - Instrument supports shall be adequate to ensure proper operation. Supports fabricated from pipe are not allowed because NC may accumulate inside the pipe stand and cause an explosion.
- Air Quality
  - Plant Instrument air supply generally shall meet quality standards established by ISA Standard 7.0.01 ""Quality Standard for Instrument Air"". The Dew Point at line pressure shall be no higher than negative 40 degrees C (negative 40 degrees F). The maximum entrained particle size shall be less than 3 microns maximum. The Oil Content shall be less than 1 ppm (weight basis). Air dryers and necessary receiver tanks with coalescing filters shall be installed where plant air enters a process area; existing plant air is dirty, wet, and oily.
- Air Supply Pressure
  - The plant has a nominal 80-90 PSIG air supply for instruments. The instrumentation system must be able to accommodate dips to 60 PSIG and peaks of 125 PSIG. To ensure proper operation, piston actuators for on/off valves should be sized for 60 PSIG.
- Piping Headers
  - Instrument air supply headers shall be designed in compliance with the piping specification for a specific area. In general, an air takeoff valve shall be supplied every 20 feet on the air supply header. All headers shall terminate with a plugged valve to facilitate future expansion
  - Branch piping air supply lines to individual instruments and controls shall be ½ inch pipe (Schedule 40 galvanized steel or stainless depending the corrosiveness of the area) with a block valve at the main air header and an individual lockable 3 way block & bleed valve within 4 foot of each air user (the 3 way block & bleed valve is for lock-out tag out). The connection between the 3 way block & bleed valve and the air user shall be stainless steel at a minimum.
- Tube fittings shall be compression type, 316 Stainless Steel minimum. Teflon tape type thread sealant shall not be used.
- Liquid Teflon thread sealant shall be used on threaded instrument connections up to 400 degrees F and only if compatible with the process. Metal tubing shall only be bent with a suitable tool to avoid crimping. Note: all chemicals, sealants, adhesives, and similar, must be tested for process compatibility before the can enter the plant.
- The following table is a guideline for the maximum number of air users per sub-header size:

SUB HEADER SIZE	NUMBER OF USERS
1/2 inch	1 to 4
3/4 inch	5 to 10
1 inch	11 to 25"

Each air supply for each user shall have a lockable 3 way block and bleed isolation valve within 4 feet of the device it serves

#### H.2.bb Factory Calibration

To ensure the quality of instrument calibration, purchase instruments requiring calibration with calibration performed in a facility certified to comply with International Organization for Standardization (ISO) 9001. Obtain ISO documentation of the calibration facility as well the instruments calibrated. For Fisher control valves, for example, ask for the "birth certificate" PSCD-172 and documentation that the facility in which testing and calibration takes place is ISO certified. For Micromotion transmitters, ask for a certificate of conformance, calibration sheet, and documentation that the facility in which testing and calibration takes place is certified to comply with ISO 9001. For instruments supplied by Rosemount, add Q4 to the instrument number (Q4 is the inspection certificate for calibration data consistent with ISO) and request Q1 (Q1 is a certificate of ISO compliance).

### I. Laboratory

#### I.1 General Requirements

The new Process Laboratory will be designed and built as part of the NC Facility. A conceptual layout of the Process Laboratory within the Administration building footprint is provided in this RFP. It will be the responsibility of the Subcontractor to ensure that the final design of the Process Laboratory provides the required functionality and meets all applicable codes and standards. The laboratory will be capable of testing acid mixes from the acid area for total sulfuric acid ( $H_2SO_4$ ), total acidity as  $H_2SO_4$ , nitrosyl sulfuric, actual nitric, and water (by difference) prior to release to nitration. The acid mixes for nitration will be batched at the acid area and tested in the process laboratory for total sulfuric acid ( $H_2SO_4$ ), total acidity as  $H_2SO_4$ , nitrosyl sulfuric, actual nitric, and water (by difference) prior to release to nitration.

I.1.a The laboratory will be capable of testing NC produced in the NC Facility per MIL-DTL-244C w/AMENDMENT 1 with references to MILSTD-286C methods and STANAG 4178 Test Procedures for Assessing the Quality of Deliveries of Nitrocellulose from One NATO Nation to Another. The NC produced in the NC Facility will be tested per MIL-DTL-244B with references to MILSTD-286C methods and STANAG 4178 Test Procedures for Assessing the Quality of Deliveries of Nitrocellulose from One NATO Nation to Another.

I.1.b The laboratory will be capable of testing acid received from the nitration process in order to determine the correct blending recipe. Acid will be tested in order to determine the correct blending recipe. Wood pulp and linters will be purchased with a "Certificate of Analysis" indicating compliance with U.S. Army standards laid out in the MIL SPECS for the various cellulose feed materials (see Raw Materials, above). As such, no specific analyses of cellulose are anticipated at this time. Proper design for safety in working with highly flammable solvents, dry NC, concentrated acids and other laboratory reagents is paramount. Containment of testing residues to prevent release to the environment, accumulation in piping or other areas and improper disposal is also required

I.1.c Suitable areas for drying and short term storage of NC samples will be required. The design intent is to minimize the amount of dry NC present and to limit it to the control area within the Process Laboratory.

I.1.d Suitable areas for the storage and dispensing of various flammable solvents and corrosive chemicals will be required.

I.1.e The laboratory shall be designed for proper design for safety in working with highly flammable solvents, dry NC, concentrated acids and other laboratory reagents. Containment of testing residues to prevent release to the environment, accumulation in piping or other areas and improper disposal is also required. The design intent is to minimize the amount of dry NC present and to limit it to the control area within the Process Laboratory.

I.1.f Subcontractor shall provide space and storage racks for bottled gases. Storage facility and room shall meet NFPA and all applicable codes.

I.1.g Subcontractor shall provide a centrally piped system for laboratory vacuum. Subcontractor is responsible for final equipment sizing and selection.

I.1.h Suitable areas for the storage and dispensing of various flammable solvents and corrosive chemicals will be required in the laboratory

I.1.i Proper design for safety in working with highly flammable solvents, dry NC, concentrated acids and other laboratory reagents is paramount. Containment of testing residues to prevent release to the environment, accumulation in piping or other areas, and improper disposal is also required.

I.1.j The laboratory vacuum at each point of use shall operate at a minimum of 19 in-Hg and 8 SCFM. Laboratory vacuum system piping shall be Type L hard drawn copper tubing conforming to ASTM B 819. Piping joints will be made with brazed fittings connections.

I.1.j Subcontractor shall provide a centrally piped system for laboratory compressed air. The laboratory compressed air system shall operate at 100-125 PSIG, -20 degrees F dew point or lower, oil free, and filtered to 0.01 micron. Subcontractor is responsible for final equipment sizing and selection.

I.1.k. Three rooms for NC testing and the one room for acid testing are considered as four separate work stations requiring specialized equipment considerations and explosive loading limits. A separate room is designated for making standards for the tests.

I.1.l Basic laboratory provisions such as hoods meeting OSHA requirements for acids and solvents, preventing the accumulation of NC dust, specialized steam tables/chest, hot air blower similar to the existing ""Hercules Laboratory-Type Blower System"", and bonding or antistatic work areas are paramount for consideration.

I.1.m Primary utilities for these tests are water, electrical, steam, air conditioning and natural gas.

End of Section

Milestone Payment Schedule Rev 0 12/11/2015

Milestone	Task	Totals	
1	Project Kickoff (CLIN 3 Option 1)	\$ 5,903,616	Dec-15
		\$ 3,889,393	
2	Submit QA Plan, Safety Plan, Baseline Schedule CLIN 1 Option 1	\$ 1,442,057	Dec 15
3	Emergency Generator Study Completed	\$ 69,330	Dec-15
4	Lighting Study Completed	\$ 214,922	Dec-15
5	Steel - Material Vendors Selected	\$ 540,771	Dec 15
6	Steel PO's Placed	\$ 540,771	Jan 16
7	Steel Submittals Received	\$ 432,617	Jan-16
8	Steel 50% Delivery	\$ 432,617	Mar-16
9	Steel - Remaining Delivery	\$ 216,308	Sep 16
		\$ 5,442,281	
10	Zapata Building Kickoff Meeting	\$ 1,360,570	Dec 15
11	Zapata Building 60% Design Review	\$ 1,360,570	Feb-16
12	Zapata Building 90% Design Review	\$ 1,088,456	May-16
13	Zapata Building 15% IFC	\$ 1,088,456	Jun 16
14	Zapata Building Closeout	\$ 544,228	Sep 16
		\$ 1,947,635	
15	Mobilization (CLIN 1 Option 3A)	\$ 1,947,635	Dec-15
	CLIN 1 Option 3B	\$ 404,829	
16	Hardware, OH Doors, Louvers - Material Vendors Selected	\$ 101,207	Jan 16
17	Hardware, OH Doors, Louvers - PO's Placed	\$ 101,207	Jan 16
18	Hardware, OH Doors, Louvers - Submittals Received	\$ 80,966	Jan-16
19	Hardware, OH Doors, Louvers - 50% Delivery	\$ 80,966	Feb-16
20	Hardware, OH Doors, Louvers Remaining Delivery	\$ 40,483	Feb-16
		\$ 4,423,385	
21	Electrical Material Confirmation and Order (CLIN 1 Option 4)	\$ 2,211,693	Dec 15
22	Electrical Material 50% Delivery	\$ 1,105,846	Dec-15
23	Electrical Material Remaining Delivery	\$ 1,105,846	Dec-15
		\$ 1,325,877	
24	PO placed for Nitration Heat Exchangers (CLIN 2, Option 1A)	\$ 662,939	Dec-15
25	Receipt of Nitration Heat Exchangers (CLIN 2 Option 1A)	\$ 662,939	Apr 16

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	CLIN 2 Option 1B	\$	2,949,721	
26	Process Pumps Major vendor selection (CLIN 2 Option 1B)	\$	204,211	Dec 15
27	PO Award for Major process Pumps (CLIN 2 Option 1B)	\$	930,296	Jan-16
28	Major Pump Cut Sheets Approved (CLIN 2 OPTION 1B)	\$	975,676	Mar-16
29	Major Pumps Delivered (CLIN 2 Option 1B)	\$	839,538	Jun 16
		\$	4,756,679	
30	Process Equipment Vendor Selection (CLIN 2 Option 2)	\$	380,534	Dec 15
31	PO placed for 50% of minor Process Equipment (CLIN 2 Option 2)	\$	1,733,545	Jan-16
32	Vendor drawing for 50% of minor Process Equipment (CLIN 2 Option 2)	\$	1,818,108	Mar 16
33	Receipt of 50% if minor Process Equipment (CLIN 2 Option 2)	\$	655,365	May-16
34	Receipt of all minor Process Equipment (CLIN 2 Option 2)	\$	169,127	Jun-16
	CLIN 2 Option 3A	\$	4,233,344	
35	Vendor Selected for Process Piping (CLIN 2 Option 3A)	\$	2,256,783	Dec-15
36	PO placed for 50% of Pipe and Valves (CLIN 2 Option 3A)	\$	1,825,241	Mar 16
37	Pipe and Valves received (CLIN 2 Option 3A)	\$	151,320	May-16
	CLIN 2 Option 3B	\$	342,840	
38	Process Piping T2 Material Vendors Selected	\$	85,710	Jan-16
39	Process Piping T2 - PO's Placed	\$	85,710	Jan-16
40	Process Piping - T2 - Submittals Received	\$	68,568	Feb 16
41	Process Piping - T2 50% Delivery	\$	68,568	Apr 16
42	Process Piping T2 Remaining Delivery	\$	34,284	May-16
	CLIN 2 Option 4	\$	3,431,847	
43	Vendor Selected for Process Piping (CLIN 2 Option 4)	\$	1,036,883	Dec-15
44	PO placed for 50% of Pipe and Valves (CLIN 2 Option 4)	\$	1,537,447	Jan 16
45	Approval of Piping and Valve cut sheets (CLIN 2 Option 4)	\$	707,763	Apr 16
46	Pipe and Valves received (CLIN 2 Option 4)	\$	149,754	May-16
	CLIN 2 Option 5	\$	4,798,849	
47	Process Equipment & Piping - T2 Material Vendors Selected	\$	1,199,712	Jan-16
48	Process Equipment & Piping T2 PO's Placed	\$	1,199,712	Jan-16
49	Process Equipment & Piping T2 Submittals Received	\$	959,770	Feb 16
50	Process Equipment & Piping T2 - 50% Delivery	\$	959,770	May-16
51	Process Equipment & Piping - T2 - Remaining Delivery	\$	479,885	Jul-16



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	<b>CLIN 2 Option 6</b>	<b>\$</b>	<b>4,613,691</b>	
52	Process Equipment & Piping T2 - Material Vendors Selected	\$	1,153,423	Jan 16
53	Process Equipment & Piping T2 - PO's Placed	\$	1,153,423	Jan 16
54	Process Equipment & Piping T2 - Submittals Received	\$	922,738	Feb 16
55	Process Equipment & Piping T2 - 50% Delivery	\$	922,738	May 16
56	Process Equipment & Piping T2 - Remaining Delivery	\$	461,369	Jul 16
	<b>CLIN 2 Option 7</b>	<b>\$</b>	<b>1,646,415</b>	
57	Process Equipment & Piping - T2 Material Vendors Selected	\$	411,604	Jan-16
58	Process Equipment & Piping T2 - PO's Placed	\$	411,604	Jan 16
59	Process Equipment & Piping T2 - Submittals Received	\$	329,283	Feb 16
60	Process Equipment & Piping T2 - 50% Delivery	\$	329,283	Apr 16
61	Process Equipment & Piping T2 - Remaining Delivery	\$	164,642	May-16
	<b>CLIN 2 Option 8</b>	<b>\$</b>	<b>523,520</b>	
62	Admin Bld. Material Vendors Selected	\$	130,880	Apr 16
63	Admin Bld. Material PO's Placed	\$	130,880	Apr 16
64	Admin Bld. Material Submittals Received	\$	104,704	May-16
65	Admin Bld. Material 50% Delivery	\$	104,704	May-16
66	Admin Bld. Material Remaining Delivery	\$	52,352	Jun-16
	<b>CLIN 3 Option 1</b>	<b>\$</b>	<b>147,039,758</b>	
67	Initiate construction site work	\$	27,096,483	Mar-16
68	Structural Steel Erection Complete Nitration & Stabilization Bldgs	\$	95,598,606	Jun 16
69	Stabilization Building Completed	\$	9,640,693	Sep 16
70	Water Trials Complete	\$	14,703,976	Aug-17
		<b>\$</b>	<b>87,079</b>	
71	Engineering Kickoff Meeting	\$	87,079	Dec-15
		<b>\$</b>	<b>546,108</b>	
72	PO placed for Generator (CLIN 3 Option 1B)	\$	546,108	Dec-15
	<b>CLIN 3 Option 1C</b>	<b>\$</b>	<b>1,730,264</b>	
73	Issue P&P Bonds	\$	1,730,264	Dec 15
		<b>\$</b>	<b>10,014,313</b>	
74	Engineering Kickoff Meeting	\$	2,472,509	Dec-15
75	Begin 60% Process Design	\$	2,472,509	Dec-15
76	60% Process Design Completed	\$	1,520,789	Jun 16

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77	Begin 90% Process Design	\$	1,013,859	Jul 16
78	90% Process Design Completed	\$	1,013,859	Oct 16
79	Begin 100%/IFC Process Design	\$	1,013,859	Nov 16
80	100%/IFC Process Design Completed	\$	506,930	Dec 16
	<b>CLIN 3 Option 1E</b>	<b>\$</b>	<b>1,103,851</b>	
81	Engineering Kickoff Meeting	\$	275,960	Dec 15
82	Submit 60% Electrical Design Package 3	\$	183,973	Jan 16
83	Submit 90% Electrical Design Package 3	\$	55,192	Mar 16
84	Submit 100%/IFC Electrical Design - Package 3	\$	36,795	Mar 16
85	Submit 60% Electrical Design - Package 4	\$	183,973	Feb-16
86	Submit 90% Electrical Design - Package 4	\$	55,192	Apr-16
87	Submit 100%/IFC Electrical Design Package 4	\$	36,795	May-16
88	Submit 60% Electrical Design - Package 6	\$	183,973	Mar 16
89	Submit 90% Electrical Design - Package 6	\$	55,192	May 16
90	Submit 100%/IFC Electrical Design - Package 6	\$	36,808	Jun-16
	<b>CLIN 3 Option 1F</b>	<b>\$</b>	<b>92,822</b>	
91	Pollution Insurance 2016 (1st)	\$	30,774	Jan 16
92	Pollution Insurance 2016 (2nd)	\$	30,774	Jun 16
93	Pollution Insurance - 2017	\$	30,774	Jan 17
	<b>CLIN 3 Option 2</b>	<b>\$</b>	<b>34,084,913</b>	
94	Train 2 Acid Tank Farm Initiation	\$	6,889,883	Jun-16
95	Train 2 Nitration Building Complete	\$	21,420,165	Feb-17
96	Train 2 Stabilization Building Complete	\$	2,366,415	May 17
97	Train 2 Water Trials Complete	\$	3,408,451	Sep 17
	<b>CLIN 3 Option 2A</b>	<b>\$</b>	<b>357,892</b>	
98	Issue P&P Bonds	\$	357,892	Jan 16
	<b>Totals</b>	<b>\$</b>	<b>245,690,422</b>	

VA100142 MOD 0 LAST MODIFICATION VA142  
 \*\*\*\*\*THIS WAGE DETERMINATION WAS ACTIVE AS OF THE END OF YEAR\*\*\*\*\*  
 General Decision Number: VA100142 09/24/2010

State: Virginia

Construction Types: Heavy (Heavy and Sewer and Water Line)

Counties: Botetourt, Craig, Giles, Montgomery, Pulaski and  
 Radford\* Counties in Virginia.

\*INDEPENDENT CITY

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Modification Number      Publication Date  
 0                              09/24/2010

SUVA2010-040 09/02/2010

	Rates	Fringes
CARPENTER, Includes Form Work....\$	13.75	1.46
CEMENT MASON/CONCRETE FINISHER...\$	19.00	3.83
ELECTRICIAN.....\$	22.08	6.30
IRONWORKER, REINFORCING.....\$	22.45	11.85
IRONWORKER, STRUCTURAL.....\$	20.55	8.25
LABORERS.....\$	9.76	0.80
Flagger.....\$	7.39	0.20
Landscape.....\$	10.00	
Pipelayer.....\$	10.76	2.25
POWER EQUIPMENT OPERATOR:		
Backhoe.....\$	11.90	2.14
Bobcat/Skid Loader.....\$	11.40	
Bulldozer.....\$	20.63	7.28
Crane, All Types.....\$	15.85	1.46
Excavator.....\$	12.50	0.54
Loader.....\$	11.71	2.11
Mechanic.....\$	26.78	6.32
Trackhoe.....\$	12.75	1.24
Tugboat.....\$	19.00	
TRUCK DRIVER: All Dump Trucks....\$	9.96	0.97

WELDERS - Receive rate prescribed for craft performing  
 operation to which welding is incidental.

Unlisted classifications needed for work not included within  
 the scope of the  
 classifications listed may be added after award only as  
 provided in the labor  
 standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates  
 listed under the  
 identifier do not reflect collectively bargained wage and  
 fringe benefit  
 rates. Other designations indicate unions whose rates have  
 been determined  
 to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

## Radford Modernization Flowdowns W52P1J-11-G-0002

FAR Reference	FAR Title	Prime	BAE DOC USGOVA	DOC TC- 10	Prescription
52.202-1	Definitions.	I-1		1	Insert the clause at 52.202-1, Definitions, in solicitations and contracts that exceed the simplified acquisition threshold.
52.203-3	Gratuities.	I 2	D-5	1	The contracting officer shall insert the clause at 52.203-3, Gratuities, in solicitations and contracts with a value exceeding the simplified acquisition threshold, except those for personal services and those between military departments or defense agencies and foreign governments that do not obligate any funds appropriated to the Department of Defense.
52.2035	Covenant Against Contingent Fees.	I 3	D-10	1	The contracting officer shall insert the clause at 52.203-5, Covenant Against Contingent Fees, in all solicitations and contracts exceeding the simplified acquisition threshold, other than those for commercial items (see Parts 2 and 12).
52.203-6	Restrictions on Subcontractor Sales to the Government.	I-4	D 10	1	The contracting officer shall insert the clause at 52.203-6, Restrictions on Subcontractor Sales to the Government, in solicitations and contracts exceeding the simplified acquisition threshold. For the acquisition of commercial items, the contracting officer shall use the clause with its Alternate 1.
52.203-7	Anti-Kickback Procedures	I 5	D-10	1	The contracting officer shall insert the clause at 52.203-7, Anti-Kickback Procedures, in solicitations and contracts exceeding the simplified acquisition threshold, other than those for commercial items (see Part 12).
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity.	I 7	D-10		In solicitations and contracts for other than commercial items that exceed the simplified acquisition threshold, insert the clauses at— (b) 52.203-10, Price or Fee Adjustment for Illegal or Improper Activity
52.203-12	Limitation on Payments to Influence Certain Federal Transactions.	I-8	D 5	1	b) Insert the clause at 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, in solicitations and contracts expected to exceed \$150,000.
52.203-13	Contractor Code of Business Ethics and Conduct	I 9	D 7		(a) Insert the clause at FAR 52.203-13, Contractor Code of Business Ethics and Conduct, in solicitations and contracts if the value of the contract is expected to exceed \$5,000,000 and the performance period is 120 days or more.



					<p>(b)(1) Unless the contract is for the acquisition of a commercial item or will be performed entirely outside the United States, insert the clause at FAR 52.203-14, Display of Hotline Poster(s), if—</p> <p>(i) The contract exceeds \$5,000,000 or a lesser amount established by the agency; and</p> <p>(ii)(A) The agency has a fraud hotline poster; or</p> <p>(B) The contract is funded with disaster assistance funds.</p> <p>(2) In paragraph (b)(3) of the clause, the contracting officer shall—</p> <p>(i) Identify the applicable posters; and</p> <p>(ii) Insert the website link(s) or other contact information for obtaining the agency and/or Department of Homeland Security poster.</p> <p>(3) In paragraph (d) of the clause, if the agency has established policies and procedures for display of the OIG fraud hotline poster at a lesser amount, the contracting officer shall replace “\$5,000,000” with the lesser amount that the agency has established.</p>
52.203-14	Display of Hotline Poster(s).	I-130			
52.203-4501	Operations Security (OPSEC) Requirements (ACC-RI)	H-2			Flow-down to all subcontractors working on or provided any sensitive information related to the contract.
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	I-6			In solicitations and contracts for other than commercial items that exceed the simplified acquisition threshold, insert the clauses at—
					(a) 52.203-8, Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity;
52.204-2	Security Requirements.	I-10	D-1		(a) The contracting officer shall insert the clause at 52.204-2, Security Requirements, in solicitations and contracts when the contract may require access to classified information, unless the conditions specified in paragraph (d) of this section apply.
52.204-4	Printed or Copied Double-Sided on Postconsumer Fiber Content Paper.	I-11			Insert the clause at 52.204-4, Printed or Copied Double-Sided on Recycled Paper, in solicitations and contracts that exceed the simplified acquisition threshold.
52.204-7	System for Award Management.	I-12	D-1		(a)(1) Except as provided in 4.1102(a), use the provisions at 52.204-7, System for Award Management, in solicitations.
52.204-9	Personal Identity Verification of Contractor Personnel.	I-13	D-1		The contracting officer shall insert the clause at 52.204-9, Personal Identity Verification of Contractor Personnel, in solicitations and contracts when contract performance requires contractors to have routine physical access to a Federally-controlled facility and/or routine access to a Federally-controlled information system. The clause shall not be used when contractors require only intermittent access to Federally-controlled facilities.
52.204-7000	Online Representations and Certifications Application (ORCA)	A-1			Flowdown required
52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment.	I-14	E-2		The contracting officer shall insert the clause at 52.209-6, Protecting the Government's Interests when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment, in solicitations and contracts where the contract value exceeds \$30,000.

52.209-9	Updates of Publicly Available Information Regarding Responsibility Matters	I-143			(c) The contracting officer shall insert the clause at 52.209-9, Updates of Publicly Available Information Regarding Responsibility Matters— (1) In solicitations where the resultant contract value is expected to exceed \$500,000; and (2) In contracts in which the offeror checked "has" in paragraph (b) of the provision at 52.209-7.
52.209-4566	Notice of Organization Conflicts of Interest (local)	I-140			Flow-down required
52.215-2	Audit and Records—Negotiation.	I-15	D-10	1	(b)(1) Except as provided in paragraph (b)(2) of this section, the contracting officer shall insert the clause at 52.215-2, Audit and Records—Negotiation (10 U.S.C. 2313, 41 U.S.C. 4706, and OMB Circular No. A-133), in solicitations and contracts except those for— (i) Acquisitions not exceeding the simplified acquisition threshold; (ii) The acquisition of utility services at rates not exceeding those established to apply uniformly to the general public, plus any applicable reasonable connection charge; or (iii) The acquisition of commercial items exempted under 15.403-1. (2)(i) When using funds appropriated or otherwise made available by the American Recovery and Reinvestment Act of 2009 (Pub. L. 111-5)—
52.215-8	Order of Precedence—Uniform Contract Format.	I-16			(h) The contracting officer shall insert the clause at 52.215-8, Order of Precedence—Uniform Contract Format, in solicitations and contracts using the format at 15.204.
52.215-10	Price Reduction for Defective Certified Cost or Pricing Data.	I-17	D-8	1	(b) Price Reduction for Defective Certified Cost or Pricing Data. The contracting officer shall, when contracting by negotiation, insert the clause at 52.215-10, Price Reduction for Defective Certified Cost or Pricing Data, in solicitations and contracts when it is contemplated that certified cost or pricing data will be required from the contractor or any subcontractor (see 15.403-4).
52.215-11	Price Reduction for Defective Certified Cost or Pricing Data—Modifications.	I-18	D-8	1	(c) Price Reduction for Defective Certified Cost or Pricing Data—Modifications. The contracting officer shall, when contracting by negotiation, insert the clause at 52.215-11, Price Reduction for Defective Certified Cost or Pricing Data—Modifications, in solicitations and contracts when it is contemplated that certified cost or pricing data will be required from the contractor or any subcontractor (see 15.403-4) for the pricing of contract modifications, and the clause prescribed in paragraph (b) of this section has not been included.
52.215-12	Subcontractor Certified Cost or Pricing Data.	I-19	D-11	1	(d) Subcontractor Certified Cost or Pricing Data. The contracting officer shall insert the clause at 52.215-12, Subcontractor Certified Cost or Pricing Data, in solicitations and contracts when the clause prescribed in paragraph (b) of this section is included.
52.215-13	Subcontractor Certified Cost or Pricing Data—Modifications.	I-20	D-11	1	(e) Subcontractor Certified Cost or Pricing Data—Modifications. The contracting officer shall insert the clause at 52.215-13, Subcontractor Certified Cost or Pricing Data—Modifications, in solicitations and contracts when the clause prescribed in paragraph (c) of this section is included.
52.215-15	Pension Adjustments and Asset Reversions.	I-21	D-8	1	(g) Pension Adjustments and Asset Reversions. The contracting officer shall insert the clause at 52.215-15, Pension Adjustments and Asset Reversions, in solicitations and contracts for which it is anticipated that certified cost or pricing data will be required or for which any preaward or postaward cost determinations will be subject to part 31.

52.215-17	Waiver of Facilities Capital Cost of Money.	I-22	D-8	(i) Waiver of Facilities Capital Cost of Money. If the prospective contractor does not propose facilities capital cost of money in its offer, the contracting officer shall insert the clause at 52.215-17, Waiver of Facilities Capital Cost of Money, in the resulting contract.
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions.	I-23	D-8	(j) Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions. The contracting officer shall insert the clause at 52.215-18, Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions, in solicitations and contracts for which it is anticipated that certified cost or pricing data will be required or for which any preaward or postaward cost determinations will be subject to Part 31.
52.215-19	Notification of Ownership Changes.	I-144	D-8	(k) Notification of Ownership Changes. The contracting officer shall insert the clause at 52.215-19, Notification of Ownership Changes, in solicitations and contracts for which it is contemplated that certified cost or pricing data will be required or for which any preaward or postaward cost determination will be subject to Subpart 31.2.
52.215-23	Limitations on Pass-Through Charges.	I-24	D-1	in solicitations and contracts including task or delivery orders as follows:  (A) For civilian agencies, insert the clause when—  (1) The total estimated contract or order value exceeds the simplified acquisition threshold as defined in section 2.101 and  (2) The contemplated contract type is expected to be a cost-reimbursement type contract as defined in Subpart 16.3; or  (B) For DoD, insert the clause when—  (1) The total estimated contract or order value exceeds the threshold for obtaining cost or pricing data in 15.403-4; and  (2) The contemplated contract type is expected to be any contract type except—  (i) A firm-fixed-price contract awarded on the basis of adequate price competition;  (ii) A fixed-price contract with economic price adjustment awarded on the basis of adequate price competition;  (iii) A firm-fixed-price contract for the acquisition of a commercial item;  (iv) A fixed-price contract with economic price adjustment, for the acquisition of a commercial item;  (v) A fixed-price incentive contract awarded on the basis of adequate price competition; or  (vi) A fixed-price incentive contract for the acquisition of a commercial item.
52.216-11	Cost Contract—No Fee.	I-26	D-14	(ii) The clause may be used when the total estimated contract or order value is below the thresholds identified in 15.408(n)(2)(i) and for any (e)(1) The contracting officer shall insert the clause at 52.216-11, Cost Contract—No Fee, in solicitations and contracts when a cost-reimbursement contract is contemplated that provides no fee and is not a cost-sharing contract.
52.216-17	Incentive Price Revision—Successive Targets.	I-132	D-13	(b) Insert the clause at 52.216-17, Incentive Price Revision—Successive Targets, in solicitations and contracts when a fixed-price incentive (successive targets) contract is contemplated. If the contract calls for supplies or services to be ordered under a provisioning document or Government option and the prices are to be subject to incentive price revision under the clause, the contracting officer shall use the clause with its Alternate I.

52.216-7	Allowable Cost and Payment.	I-131			(a)(1) The contracting officer shall insert the clause at 52.216-7, Allowable Cost and Payment, in solicitations and contracts when a cost reimbursement contract or a time-and-materials contract (other than a contract for a commercial item) is contemplated. If the contract is a time-and-materials contract, the clause at 52.216-7 applies in conjunction with the clause at 52.232-7), but only to the portion of the contract that provides for reimbursement of materials (as defined in the clause at 52.232-7) at actual cost. Further, the clause at 52.216-7 does not apply to labor-hour contracts.
52.216-8	Ordering.	I-25	D-14		(a) Insert the clause at 52.216-8, Ordering, in solicitations and contracts when a definite-quantity contract, a requirements contract, or an indefinite-quantity contract is contemplated.
52.217-8	Option to Extend Services.	I-133			(f) Insert a clause substantially the same as the clause at 52.217-8, Option to Extend Services, in solicitations and contracts for services when the inclusion of an option is appropriate. (See 17.200, 17.202, and 37.111.)
52.219-8	Utilization of Small Business Concerns.	I-27	D-1		(a) Insert the clause at 52.219-8, Utilization of Small Business Concerns, in solicitations and contracts when the contract amount is expected to exceed the simplified acquisition threshold unless—  (1) A personal services contract is contemplated (see 37.104); or  (2) The contract, together with all of its subcontracts, will be performed entirely outside of the United States and its outlying areas.
52.219-9	Small Business Subcontracting Plan.	I-28	D-6		b)(1) Insert the clause at 52.219-9, Small Business Subcontracting Plan, in solicitations and contracts that offer subcontracting possibilities, are expected to exceed \$650,000 (\$1.5 million for construction of any public facility), and are required to include the clause at 52.219-8, Utilization of Small Business Concerns, unless the acquisition is set aside or is to be accomplished under the 8(a) program. When—  (i) Contracting by sealed bidding rather than by negotiation, the contracting officer shall use the clause with its Alternate I.  (ii) Contracting by negotiation, and subcontracting plans are required with initial proposals as provided for in 19.705-2(d), the contracting officer shall use the clause with its Alternate II.  (iii) The contract action will not be reported in the Federal Procurement Data System pursuant to 4.606(c)(5), or (c)(6), the contracting officer shall use the clause with its Alternate III.  (2) Insert the clause at 52.219-16, Liquidated Damages—Subcontracting Plan, in all solicitations and contracts containing the clause at 52.219-9, Small Business Subcontracting Plan, or the clause with its Alternate I, II, or III.
52.219-9 Alt II	Small Business Subcontracting Plan.	I-29			Insert the clause at 52.219-9, Small Business Subcontracting Plan, in solicitations and contracts that offer subcontracting possibilities, are expected to exceed \$650,000 (\$1.5 million for construction of any public facility), and are required to include the clause at 52.219-8, Utilization of Small Business Concerns, unless the acquisition is set aside or is to be accomplished under the 8(a) program. When—  (ii) Contracting by negotiation, and subcontracting plans are required with initial proposals as provided for in 19.705-2(d), the contracting officer shall use the clause with its Alternate II.
52.219-16	Liquidated Damages—Subcontracting Plan.	I-30	D-6		(2) Insert the clause at 52.219-16, Liquidated Damages—Subcontracting Plan, in all solicitations and contracts containing the clause at 52.219-9, Small Business Subcontracting Plan, or the clause with its Alternate I, II, or III.
52.219-28	Post-Award Small Business Program Rerepresentation.	I-145			(d) Insert the clause at 52.219-28, Post-Award Small Business Program Rerepresentation, in solicitations and contracts exceeding the micro-purchase threshold when the contract will be performed in the United States or its outlying areas.

52.222-1	Notice to the Government of Labor Disputes.	I-31	D-1	1	a) The contracting officer shall insert the clause at 52.222-1, Notice to the Government of Labor Disputes, in solicitations and contracts that involve programs or requirements that have been designated under 22.101-1(e).
52.222-3	Convict Labor.	I-32			Insert the clause at 52.222-3, Convict Labor, in solicitations and contracts above the micro-purchase threshold, when the contract will be performed in the United States, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands; unless—  (a) The contract will be subject to 41 U.S.C. chapter 65, Contracts for Materials, Supplies, Articles, and Equipment Exceeding \$15,000 (see Subpart 22.6), which contains a separate prohibition against the employment of convict labor;
52.222-4	Contract Work Hours and Safety Standards —Overtime Compensation.	I-33	D-10	1	Insert the clause at 52.222-4, Contract Work Hours and Safety Standards—Overtime Compensation, in solicitations and contracts (including, for this purpose, basic ordering agreements) when the contract may require or involve the employment of laborers or mechanics. However, do not include the clause in solicitations and contracts—  (a) Valued at or below \$150,000;  (b) For commercial items;  (c) For transportation or the transmission of intelligence;  (d) To be performed outside the United States, Puerto Rico, American Samoa, Guam, the U.S. Virgin Islands, Johnston Island, Wake Island, and the outer Continental Shelf as defined in the Outer Continental Shelf Lands Act (43 U.S.C. 1331) (29 CFR 5.15);  (e) For work to be done solely in accordance with 41 U.S.C. chapter 65, Contracts for Materials, Supplies, Articles, and Equipment Exceeding \$15,000 (see Subpart 22.6);  (f) For supplies that include incidental services that do not require substantial employment of laborers or mechanics; or  (g) Exempt under regulations of the Secretary of Labor (29 CFR 5.15).
52.222-6	Construction Wage Rate Requirements.	I-34		1	Insert the following clauses in solicitations and contracts in excess of \$2,000 for construction within the United States:  (1) 52.222-6, Construction Wage Rate Requirements.
52.222-12	Contract Termination—Debarment.	I-35		1	(7) 52.222-12, Contract Termination-Debarment.
52.222-19	Child Labor—Cooperation with Authorities and Remedies.	I-36			(b) Insert the clause at 52.222-19, Child Labor—Cooperation with Authorities and Remedies, in all solicitations and contracts for the acquisition of supplies that are expected to exceed the micro-purchase thresholds.
52.222-20	Contracts for Materials, Supplies, Articles, and Equipment Exceeding \$15,000.	I-37	D-1	1	The contracting officer shall insert the clause at 52.222-20, Contracts for Materials, Supplies, Articles, and Equipment Exceeding \$15,000, in solicitations and contracts covered by the statute (see 22.603, 22.604, and 22.605).
52.222-21	Prohibition of Segregated Facilities.	I-38	D-1	1	a) When a contract is contemplated that will include the clause at 52.222-26, Equal Opportunity, the contracting officer shall insert—  (1) The clause at 52.222-21, Prohibition of Segregated Facilities, in the solicitation and contract;
52.222-26	Equal Opportunity.	I-39	D-1	1	(e) The contracting officer shall insert the clause at 52.222-26, Equal Opportunity, in solicitations and contracts (see 22.802) unless the contract is exempt from all of the requirements of E.O. 11246 (see 22.807(a)). If the contract is exempt from one or more, but not all, of the requirements of E.O. 11246, the contracting officer shall use the clause with its Alternate I.



52.222-30	Construction Wage Rate Requirements—Price Adjustment (None or Separately Specified Method).	I-40		<p>(e) Insert the clause at 52.222-30, Construction Wage Rate Requirements—Price Adjustment (None or Separately Specified Pricing Method), in solicitations and contracts if the contract is expected to be—</p> <p>(1) A fixed-price contract subject to the Construction Wage Rate Requirements statute that will contain option provisions by which the contracting officer may extend the term of the contract, and the contracting officer determines the most appropriate contract price adjustment method is the method at 22.404-12(c)(1) or (2); or</p> <p>(2) A cost-reimbursable type contract subject to the Construction Wage Rate Requirements statute that will contain option provisions by which the contracting officer may extend the term of the contract.</p>
52.222-34	Project Labor Agreement.	I-41		<p>b)(1) Insert the clause at 52.222-34, Project Labor Agreement, in all solicitations and contracts associated with the construction project.</p>
52.222-35	Equal Opportunity for Veterans.	I-42	D-4	<p>(a)(1) Insert the clause at 52.222-35, Equal Opportunity for Veterans, in solicitations and contracts if the expected value is \$100,000 or more, except when—</p> <p>(i) Work is performed outside the United States by employees recruited outside the United States; or</p> <p>(ii) The Director, Office of Federal Contract Compliance Programs of the U.S. Department of Labor, has waived, in accordance with 22.1305(a), or the head of the agency has waived, in accordance with 22.1305(b), all of the terms of the clause.</p>
52.222-36	Equal Opportunity for Workers with Disabilities.	I-43	D-2	<p>(a) Insert the clause at 52.222-36, Equal Opportunity for Workers with Disabilities, in solicitations and contracts that exceed or are expected to exceed \$15,000, except when—</p> <p>(1) Both the performance of the work and the recruitment of workers will occur outside the United States, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island; or</p> <p>(2) The Director of OFCCP or agency head has waived, in accordance with 22.1403(a) or 22.1403(b) all the terms of the clause.</p>
52.222-37	Employment Reports on Veterans.	I-44	D-9	<p>(b) Insert the clause at 52.222-37, Employment Reports on Veterans, in solicitations and contracts containing the clause at 52.222-35, Equal Opportunity for Veterans.</p>

52.222-41	Service Contract Labor Standards.	I-45	D-1	<p>(a)(1) The contracting officer shall insert the clause at 52.222-41, Service Contract Labor Standards, in solicitations and contracts (except as provided in paragraph (a)(2) of this section) if the contract is subject to the Service Contract Labor Standards statute and is—</p> <p>(i) Over \$2,500; or</p> <p>(ii) For an indefinite dollar amount and the contracting officer does not know in advance that the contract amount will be \$2,500 or less.</p> <p>(2) The contracting officer shall not insert the clause at 52.222-41 (or any of the associated Service Contract Labor Standards statute clauses as prescribed in this section for possible use when 52.222-41 applies) in the resultant contract if —</p> <p>(i) The solicitation includes the provision at—</p> <p>(A) 52.222-48, Exemption from Application of the Service Contract Labor Standards statute to Contracts for Maintenance, Calibration, or Repair of Certain Equipment—Certification;</p> <p>(B) 52.222-52, Exemption from Application of the Service Contract Labor Standards statute to Contracts for Certain Services—Certification; or</p> <p>(C) Either of the comparable certifications is checked as applicable in the provision at 52.204-8(c)(2)(ii) or (iii) or 52.212-3(k); and</p> <p>(ii) The contracting officer has made the determination, in accordance with paragraphs (c)(3) or (d)(3) of subsection 22.1003-4, that the Service Contract Labor Standards statute does not apply to the contract. (In such case, insert the clause at 52.222-51, Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment-Requirements, or 52.222-53, Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services-Requirements, in the contract, in accordance with the prescription at paragraph (e)(2)(ii) or (e)(4)(ii) of this subsection).</p>
52.222-42	Statement of Equivalent Rates for Federal Hires.	I-134		<p>(b) The contracting officer shall insert the clause at 52.222-42, Statement of Equivalent Rates for Federal Hires, in solicitations and contracts if the contract amount is expected to be over \$2,500 and the Service Contract Labor Standards statute is applicable. (See 22.1016.)</p>
52.222-43	Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (Multiple Year and Option Contracts).	I-46		<p>(c)(1) The contracting officer shall insert the clause at 52.222-43, Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (Multiple Year and Option Contracts), or another clause which accomplishes the same purpose, in solicitations and contracts if the contract is expected to be a fixed-price, time-and-materials, or labor-hour service contract containing the clause at 52.222-41, Service Contract Labor Standards, and is a multiple year contract or is a contract with options to renew which exceeds the simplified acquisition threshold. The clause may be used in contracts that do not exceed the simplified acquisition threshold. The clause at 52.222-43, Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (Multiple Year and Option Contracts), applies to both contracts subject to area prevailing wage determinations and contracts subject to the incumbent contractor's collective bargaining agreement in effect during this contract's preceding contract period (see 22.1002-2 and 22.1002-3). Contracting officers shall ensure that contract prices or contract unit price labor rates are adjusted only to the extent that a contractor's increases or decreases in applicable wages and fringe benefits are made to comply with the requirements set forth in the clauses at 52.222-43 (subparagraphs (d)(1), (2) and (3)), or 52.222-44 (subparagraphs (b)(1) and (2)). (For example, the prior year wage determination required a minimum wage rate of \$4.00 per hour. The contractor actually paid \$4.10. The new wage determination increases the minimum rate to \$4.50. The contractor increases the rate actually paid to \$4.75 per hour. The allowable price adjustment is \$.40 per hour.)</p>
52.222-44	Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment.	I-47		<p>(2) The contracting officer shall insert the clause at 52.222-44, Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment, in solicitations and contracts if the contract is expected to be a fixed-price, time-and-materials, or labor-hour service contract containing the clause at 52.222-41, Service Contract Labor Standards, exceeds the simplified acquisition threshold, and is not a multiple year contract or is not a contract with options to renew. The clause may be used in contracts that do not exceed the simplified acquisition threshold. The clause at 52.222-44, Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment, applies to both contracts subject to area prevailing wage determinations and contracts subject to contractor collective bargaining agreements (see 22.1002-2 and 22.1002-3).</p>

52.222-50	Combating Trafficking in Persons.	I-48	D-1	(a) Insert the clause at 52.222-50, Combating Trafficking in Persons, in all solicitations and contracts.
				Insert the clause at 52.222-54, Employment Eligibility Verification, in all solicitations and contracts that exceed the simplified acquisition threshold, except those that—  (a) Are only for work that will be performed outside the United States;  (b) Are for a period of performance of less than 120 days; or  (c) Are only for—  (1) Commercially available off the shelf items;  (2) Items that would be COTS items, but for minor modifications (as defined at paragraph (3)(ii) of the definition of "commercial item" at 2.101);  (3) Items that would be COTS items if they were not bulk cargo; or  (4) Commercial services that are—  (i) Part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications);  (ii) Performed by the COTS provider; and  (iii) Are normally provided for that COTS item.
52.222-54	Employment Eligibility Verification.	I-49	D-1	
52.222-4500	Dismissals (local)	I-152		Flow-down required
52.2235	Pollution Prevention and Right-to-Know Information.	I-50		(a) Insert the clause at 52.223-5, Pollution Prevention and Right-to-Know Information, in solicitations and contracts that provide for performance, in whole or in part, on a Federal facility.
52.223-6	Drug-Free Workplace.	I-51	D-1	Except as provided in 23.501, insert the clause at 52.223-6, Drug-Free Workplace, in solicitations and contracts.
52.223-10	Waste Reduction Program.	I-52		(a) Insert the clause at 52.223-10, Waste Reduction Program, in all solicitations and contracts for contractor operation of Government-owned or -leased facilities and all solicitations and contracts for support services at Government-owned or -operated facilities
52.223-12	Refrigeration Equipment and Air Conditioners.	I-53		(b) 52.223-12, Refrigeration Equipment and Air Conditioners, in solicitations and contracts for services when the contract includes the maintenance, repair, or disposal of any equipment or appliance using ozone-depleting substances as a refrigerant, such as air conditioners, including motor vehicles, refrigerators, chillers, or freezers.
52.223-14	Acquisition of EPEAT® Registered Televisions.	I-54		(d)(1) Unless an exception applies in accordance with 23.704(a), insert the clause at 52.223-14, Acquisition of EPEAT®-Registered Televisions, in all solicitations and contracts when televisions will be—  (i) Delivered;  (ii) Acquired by the contractor for use in performing services at a Federally controlled facility; or  (iii) Furnished by the contractor for use by the Government.

52.223-15	Energy Efficiency in Energy Consuming Products	I-55			Unless exempt pursuant to 23.204, insert the clause at 52.223-15, Energy Efficiency in Energy Consuming Products, in solicitations and contracts when energy-consuming products listed in the ENERGY STAR® Program or FEMP will be—  (a) Delivered;  (b) Acquired by the contractor for use in performing services at a Federally-controlled facility;  (c) Furnished by the contractor for use by the Government; or  (d) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.
52.223-17	Affirmative Procurement of EPA-designated Items in Service and Construction Contracts.	I-56			(e) Insert the clause at 52.223-17, Affirmative Procurement of EPA-designated Items in Service and Construction Contracts, in service or construction solicitations and contracts unless the contract will not involve the use of EPA-designated items.
52.223-18	Encouraging Contractor Policies to Ban Text Messaging While Driving.	I-57	D-1		The contracting officer shall insert the clause at 52.223-18, Encouraging Contractor Policies to Ban Text Messaging While Driving, in all solicitations and contracts.
52.224-1	Privacy Act Notification.	I-58			When the design, development, or operation of a system of records on individuals is required to accomplish an agency function, the contracting officer shall insert the following clauses in solicitations and contracts:  (a) The clause at 52.224-1, Privacy Act Notification.  (b) The clause at 52.224-2, Privacy Act.
52.224-2	Privacy Act.	I-59	D-8	1	When the design, development, or operation of a system of records on individuals is required to accomplish an agency function, the contracting officer shall insert the following clauses in solicitations and contracts:  (a) The clause at 52.224-1, Privacy Act Notification.  (b) The clause at 52.224-2, Privacy Act.
52.225-13	Restrictions on Certain Foreign Purchases.	I-60	D-1	1	a) Restrictions on certain foreign purchases. Insert the clause at 52.225-13, Restrictions on Certain Foreign Purchases, in solicitations and contracts, unless an exception applies.
52.227-1	Authorization and Consent.	I-61	D-1	1	a)(1) Insert the clause at 52.227-1, Authorization and Consent, in solicitations and contracts except that use of the clause is—  (i) Optional when using simplified acquisition procedures; and  (ii) Prohibited when both complete performance and delivery are outside the United States.
52.228-16	Performance and Payment Bonds—Other Than Construction.	I-135			The contracting officer shall insert a clause substantially the same as the clause at 52.228-16, Performance and Payment Bonds—Other Than Construction, in solicitations and contracts that contain a requirement for both payment and performance bonds. The contracting officer shall determine the amount of each bond for insertion in the clause. The amount shall be adequate to protect the interest of the Government. The contracting officer shall also set a period of time (normally 10 days) for return of executed bonds. Alternate I shall be used when only performance bonds are required.
52.228-4567	Required Insurance (RICC)	I-141			Flowdown consistent with 52.228-5 Insurance on Government Installation or 52.228-7 Insurance Liability to Third Persons

52.228-5	Insurance—Work on a Government Installation.	I-62	D-8	1	<p>(a) Insert the clause at 52.228-5, Insurance—Work on a Government Installation, in solicitations and contracts if a fixed-price contract is contemplated, the contract amount is expected to exceed the simplified acquisition threshold, and the contract will require work on a Government installation, unless—</p> <p>(1) Only a small amount of work is required on the Government installation (e.g., a few brief visits per month); or</p> <p>(2) All work on the Government installation will be performed outside the United States and its outlying areas.</p> <p>(b) The contracting officer may insert the clause at 52.228-5 in solicitations and contracts described in paragraphs (a)(1) and (2) of this section if it is in the Government's interest to do so.</p>
52.228-7	Insurance—Liability to Third Persons.	I-63			<p>In accordance with agency acquisition regulations, the contracting officer shall insert the clause at 52.228-7, Insurance—Liability to Third Persons, in solicitations and contracts, other than those for construction contracts and those for architect-engineer services, when a cost-reimbursement contract is contemplated.</p>
52.229-3	Federal, State, and Local Taxes.	I-64	D-5		<p>a) Except as provided in paragraph (b) of this section, insert the clause at 52.229-3, Federal, State, and Local Taxes, in solicitations and contracts if—</p> <p>(1) The contract is to be performed wholly or partly in the United States or its outlying areas;</p> <p>(2) A fixed-price contract is contemplated; and</p> <p>(3) The contract is expected to exceed the simplified acquisition threshold.</p> <p>(b) In a noncompetitive contract that meets all the conditions in paragraph (a) of this section, the contracting officer may insert the clause at 52.229-4, Federal, State, and Local Taxes (State and Local Adjustments), instead of the clause at 52.229-3, if the price would otherwise include an inappropriate contingency for potential postaward change(s) in State or local taxes.</p>
52.230-2	Cost Accounting Standards.	I-65	D-8	1	<p>(a) Cost accounting standards.</p> <p>(1) The contracting officer shall insert the clause at FAR 52.230-2, Cost Accounting Standards, in negotiated contracts, unless the contract is exempted (see 48 CFR 9903.201-1 (FAR Appendix)), the contract is subject to modified coverage (see 48 CFR 9903.201-2 (FAR Appendix)), or the clause prescribed in paragraph (c) of this subsection is used.</p> <p>(2) The clause at FAR 52.230-2 requires the contractor to comply with all CAS specified in 48 CFR 9904 (FAR Appendix), to disclose actual cost accounting practices (applicable to CAS-covered contracts only), and to follow disclosed and established cost accounting practices consistently.</p>
52.230-3	Disclosure and Consistency of Cost Accounting Practices.	I-66	D-8	1	<p>(b) Disclosure and consistency of cost accounting practices.</p> <p>(1) Insert the clause at FAR 52.230-3, Disclosure and Consistency of Cost Accounting Practices, in negotiated contracts when the contract amount is over \$700,000, but less than \$50 million, and the offeror certifies it is eligible for and elects to use modified CAS coverage (see 48 CFR 9903.201-2 (FAR Appendix)), unless the clause prescribed in paragraph (c) of this subsection is used.</p>
52.230-6	Administration of Cost Accounting Standards.	I-67	D-8	1	<p>(d) Administration of cost accounting standards.</p> <p>(1) The contracting officer shall insert the clause at FAR 52.230-6, Administration of Cost Accounting Standards, in contracts containing any of the clauses prescribed in paragraphs (a), (b), (c), or (e) of this subsection.</p>



52.231-4510	Reservation (RICC)	A-2		Flow-down required
				(a) The contracting officer shall insert the following clauses, appropriately modified with respect to payment due dates, in accordance with agency regulations--
52.232-1	Payments.	I-68		(1) The clause at 52.232-1, Payments, in solicitations and contracts when a fixed-price supply contract, a fixed-price service contract, or a contract for nonregulated communication services is contemplated;
				(b) The contracting officer shall insert the following clauses, appropriately modified with respect to payment due dates in accordance with agency regulations:
52.232-8	Discounts for Prompt Payment.	I-69		(1) The clause at 52.232-8, Discounts for Prompt Payment, in solicitations and contracts when a fixed-price supply contract or fixed-price service contract is contemplated
52.232-11	Extras.	I-70		(2) The clause at 52.232-11, Extras, in solicitations and contracts when a fixed-price supply contract, fixed-price service contract, or a transportation contract is contemplated.
52.232-16	Progress Payments.	I-136		<p>(a)(1) Insert the clause at 52.232-16, Progress Payments, in</p> <p>(i) Solicitations that may result in contracts providing for progress payments based on costs; and</p> <p>(ii) Fixed-price contracts under which the Government will provide progress payments based on costs.</p> <p>(2) If advance agency approval has been given in accordance with 32.501-1, the contracting officer may substitute a different customary rate for other than small business concerns for the progress payment and liquidation rate indicated.</p> <p>(3) If an unusual progress payment rate is approved for the prime contractor (see 32.501-2), substitute the approved rate for the customary rate in paragraphs (a)(1), (a)(6), and (b) of the clause.</p> <p>(4) If the liquidation rate is changed from the customary progress payment rate (see 32.503-8 and 32.503-9), substitute the new rate for the rate in paragraphs (a)(1), (a)(6), and (b) of the clause.</p> <p>(5) If an unusual progress payment rate is approved for a subcontract (see 32.504(c) and 32.501-2), modify paragraph (j)(6) of the clause to specify the new rate, the name of the subcontractor, and that the new rate shall be used for that subcontractor in lieu of the customary rate.</p>

52.232-17	Interest.	I-71			<p>(a) The contracting officer shall insert the clause at 52.232-17, Interest, in solicitations and contracts unless it is contemplated that the contract will be in one or more of the following categories:</p> <p>(1) Contracts at or below the simplified acquisition threshold.</p> <p>(2) Contracts with Government agencies.</p> <p>(3) Contracts with a State or local government or instrumentality.</p> <p>(4) Contracts with a foreign government or instrumentality.</p> <p>(5) Contracts without any provision for profit or fee with a nonprofit organization.</p> <p>(6) Contracts described in Subpart 5.5, Paid Advertisements.</p> <p>(7) Any other exceptions authorized under agency procedures.</p> <p>(b) The contracting officer may insert the FAR clause at 52.232-17, Interest, in solicitations and contracts when it is contemplated that the contract will be in any of the categories specified in 32.611(a).</p>
52.232-20	Limitation of Cost.	I-72	D-14		<p>(a) The contracting officer shall insert the clause at 52.232-20, Limitation of Cost, in solicitations and contracts if a fully funded cost-reimbursement contract is contemplated, whether or not the contract provides for payment of a fee.</p>
52.232-22	Limitation of Funds.	I-73	D-14		<p>b) The contracting officer shall insert the clause at 52.232-22, Limitation of Funds, in solicitations and contracts if an incrementally funded cost-reimbursement contract is contemplated.</p>
52.232-23	Assignment of Claims.	I-74			<p>a)(1) The contracting officer shall insert the clause at 52.232-23, Assignment of Claims, in solicitations and contracts expected to exceed the micro-purchase threshold, unless the contract will prohibit the assignment of claims (see 32.803(b)). The use of the clause is not required for purchase orders. However, the clause may be used in purchase orders expected to exceed the micro-purchase threshold, that are accepted in writing by the contractor, if such use is consistent with agency policies and regulations.</p> <p>(2) If a no-setoff commitment has been authorized (see 32.803(d)), the contracting officer shall use the clause with its Alternate I.</p>
52.232-25	Prompt Payment.	I-75			<p>(c) Insert the clause at 52.232-25, Prompt Payment, in all other solicitations and contracts, except when the clause at 52.212-4, Contract Terms and Conditions Commercial Items, applies, or when payment terms and late payment penalties are established by other governmental authority (e.g., tariffs).</p>

				<p>a) Insert the clause at 52.232-32, Performance-Based Payments, in—</p> <p>(1) Solicitations that may result in contracts providing for performance-based payments; and</p> <p>(2) Fixed-price contracts under which the Government will provide performance-based payments.</p>
52.232-32	Performance-Based Payments.	I-137	D-1	
52.232-33	Payment by Electronic Funds Transfer-System for Award Management.	I-76		<p>(a) The contracting officer shall insert the clause at—</p> <p>(1) 52.232-33, Payment by Electronic Funds Transfer—System for Award Management, in solicitations and contracts that include the provision at 52.204-7 or an agency clause that requires a contractor to be registered in the System for Award Management (SAM) database and maintain registration until final payment, unless—</p> <p>(i) Payment will be made through a third party arrangement (see 13.301 and paragraph (d) of this section); or</p> <p>(ii) An exception listed in 32.1103(a) through (i) applies.</p>
52.233-1	Disputes.	I-77		<p>(a) Insert the clause at 52.233-1, Disputes, in solicitations and contracts, unless the conditions in 33.203(b) apply. If it is determined under agency procedures that continued performance is necessary pending resolution of any claim arising under or relating to the contract, the contracting officer shall use the clause with its Alternate I.</p>
52.233-3	Protest after Award.	I-78	D-8	<p>(b) The contracting officer shall insert the clause at 52.233-3, Protest After Award, in all solicitations and contracts.</p>
52.233-4	Applicable Law for Breach of Contract Claim.	I-79		<p>(b) Insert the clause at 52.233-4 in all solicitations and contracts.</p>
52.236-11	Use and Possession Prior to Completion.	I-82		<p>36.511 Use and possession prior to completion.</p> <p>The contracting officer shall insert the clause at 52.236-11, Use and Possession Prior to Completion, in solicitations and contracts when a fixed-price construction contract is contemplated and the contract award amount is expected to exceed the simplified acquisition threshold. This clause may be inserted in solicitations and contracts when the contract amount is expected to be at or below the simplified acquisition threshold.</p>
52.236-13	Accident Prevention.	I 83		<p>(a) The contracting officer shall insert the clause at 52.236-13, Accident Prevention, in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be at or below the simplified acquisition threshold. If the contract will involve work of a long duration or hazardous nature, the contracting officer shall use the clause with its Alternate I.</p> <p>(b) The contracting officer shall insert the clause or the clause with its Alternate I in solicitations and contracts when a contract for services to be performed at Government facilities (see 48 CFR Part 37) is contemplated, and technical representatives advise that special precautions are appropriate</p> <p>(c) The contracting officer should inform the Occupational Safety and Health Administration (OSHA), or other cognizant Federal, State, or local officials, of instances where the contractor has been notified to take immediate action to correct serious or imminent dangers.</p>
52.236-17	Layout of Work.	I 84		<p>The contracting officer shall insert the clause at 52.236-17, Layout of Work, in solicitations and contracts when a fixed-price construction contract is contemplated and use of this clause is appropriate due to a need for accurate work layout and for siting verification during work performance</p>
52.236-2	Differing Site Conditions.	I-80		<p>The contracting officer shall insert the clause at 52.236-2, Differing Site Conditions, in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be at or below the simplified acquisition threshold.</p>

52.236-3	Site Investigation and Conditions Affecting the Work.	I-81		36.503 Site investigation and conditions affecting the work. The contracting officer shall insert the clause at 52.236-3, Site Investigation and Conditions Affecting the Work, in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may insert the clause in solicitations and contracts when a fixed price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be at or below the simplified acquisition threshold.
52.237-2	Protection of Government Buildings, Equipment, and Vegetation.	I-85	D-8	(b) The contracting officer shall insert the clause at 52.237-2, Protection of Government Buildings, Equipment, and Vegetation, in solicitations and contracts for services to be performed on Government installations, unless a construction contract is contemplated.
52.242-1	Notice of Intent to Disallow Costs.	I-86	D-14	(a) The contracting officer shall insert the clause at 52.242-2, Production Progress Reports, in solicitations and contracts when production progress reporting is required; unless a construction contract, or a Federal Supply Schedule contract is contemplated.
52.242-13	Bankruptcy.	I-88	D-10	The contracting officer shall insert the clause at 52.242-13, Bankruptcy, in all solicitations and contracts exceeding the simplified acquisition threshold.
52.242-15	Stop-Work Order	F-1	D-8	(b)(1) The contracting officer may, when contracting by negotiation, insert the clause at 52.242-15, Stop-Work Order, in solicitations and contracts for supplies, services, or research and development.
52.242-15 Alt 1	Stop Work Order, Alt 1	F-2		(2) If a cost-reimbursement contract is contemplated, the contracting officer shall use the clause with its Alternate I. (b)(1) The contracting officer may, when contracting by negotiation, insert the clause at 52.242-15, Stop-Work Order, in solicitations and contracts for supplies, services, or research and development.
52.242-17	Government Delay of Work.	F-3		(2) If a cost-reimbursement contract is contemplated, the contracting officer shall use the clause with its Alternate I. c) The contracting officer shall insert the clause at 52.242-17, Government Delay of Work, in solicitations and contracts when a fixed-price contract is contemplated for supplies other than commercial or modified-commercial items. The clause use is optional when a fixed-price contract is contemplated for services, or for supplies that are commercial or modified-commercial items
52.242-3	Penalties for Unallowable Costs.	I-87		Use the clause at 52.242-3, Penalties for Unallowable Costs, in all solicitations and contracts over \$700,000 except fixed-price contracts without cost incentives or any firm fixed-price contract for the purchase of commercial items. Generally, covered contracts are those which contain one of the clauses at 52.216-7, 52.216-16, or 52.216-17, or a similar clause from an executive agency's supplement to the FAR.
52.243-1	Changes—Fixed-Price.	I-89	D-13	(a)(1) The contracting officer shall insert the clause at 52.243-1, Changes—Fixed-Price, in solicitations and contracts when a fixed-price contract for supplies is contemplated.
52.243-4	Changes.	I 90		(d) The contracting officer shall insert the clause at 52.243-4, Changes, in solicitations and contracts for — (1) Dismantling, demolition, or removal of improvements; and (2) Construction, when a fixed-price contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold.

52.244-2	Subcontracts.	I-138		<p>a)(1) The contracting officer shall insert the clause at 52.244-2, Subcontracts, in solicitations and contracts when contemplating—</p> <p>(i) A cost-reimbursement contract;</p> <p>(ii) A letter contract that exceeds the simplified acquisition threshold;</p> <p>(iii) A fixed-price contract that exceeds the simplified acquisition threshold under which unpriced contract actions (including unpriced modifications or unpriced delivery orders) are anticipated;</p> <p>(iv) A time-and-materials contract that exceeds the simplified acquisition threshold; or</p> <p>(v) A labor-hour contract that exceeds the simplified acquisition threshold.</p> <p>(2) If a cost-reimbursement contract is contemplated, for civilian agencies other than the Coast Guard and the National Aeronautics and Space Administration, the contracting officer shall use the clause with its Alternate I.</p> <p>(3) Use of this clause is not required in—</p> <p>(i) Fixed-price architect-engineer contracts; or</p> <p>(ii) Contracts for mortuary services, refuse services, or shipment and storage of personal property, when an agency-prescribed clause on approval of subcontractors' facilities is required.</p>
52.245-1	Government Property.	I-91	D-1	<p>(a)(1) Except as provided in paragraph (d) of this section, the contracting officer shall insert the clause at 52.245-1, Government Property, in—</p> <p>(i) All cost-reimbursement and time-and-material type solicitations and contracts, and labor-hour solicitations when property is expected to be furnished for the labor-hour contracts.</p> <p>(ii) Fixed-price solicitations and contracts when the Government will provide Government property.</p> <p>(iii) Contracts or modifications awarded under FAR Part 12 procedures where Government property that exceeds the simplified acquisition threshold, as defined in FAR 2.101, is furnished or where the contractor is directed to acquire property for use under the contract that is titled in the Government.</p> <p>(2) The contracting officer shall use the clause with its Alternate I in contracts other than those identified in FAR 45.104(a), Responsibility and Liability for Government Property.</p> <p>(3) The contracting officer shall use the clause with its Alternate II when a contract for the conduct of basic or applied research at nonprofit institutions of higher education or at nonprofit organizations whose primary purpose is the conduct of scientific research (see 35.014) is contemplated.</p>
52.245-4534	Request for Use of Accountable Property (RICC)	I-153		Flowdown to subcontractors utilizing Government Property in performance of subcontracted effort.
52.245-4569	Force protection Costs (RICC)	I-154		Flow-down required
52.246-3	Inspection of Supplies—Cost-Reimbursement.	E-1	D-14	The contracting officer shall insert the clause at 52.246-3, Inspection of Supplies—Cost-Reimbursement, in solicitations and contracts for supplies, or services that involve the furnishing of supplies, when a cost-reimbursement contract is contemplated.



52.246-4	Inspection of Supplies—Fixed-Price.	E-2	D-13	The contracting officer shall insert the clause at 52.246-2, Inspection of Supplies—Fixed-Price, in solicitations and contracts for supplies, or services that involve the furnishing of supplies, when a fixed-price contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may insert the clause in such solicitations and contracts when the contract amount is expected to be at or below the simplified acquisition threshold and inclusion of the clause is in the Government's interest. If a fixed-price incentive contract is contemplated, the contracting officer shall use the clause with its Alternate I. If a fixed-ceiling-price contract with retroactive price redetermination is contemplated, the contracting officer shall use the clause with its Alternate II.
52.246-8	Inspection of Research and Development—Cost-Reimbursement.	E-3	D-14	The contracting officer shall insert the clause at 52.246-8, Inspection of Research and Development—Cost-Reimbursement, in solicitations and contracts for research and development when (a) the primary objective of the contract is the delivery of end items other than designs, drawings, or reports, and (b) a cost-reimbursement contract is contemplated; unless use of the clause is impractical and the clause prescribed in 46.309 is considered to be more appropriate. If it is contemplated that the contract will be on a no fee basis, the contracting officer shall use the clause with its Alternate I.
52.246-12	Inspection of Construction.	E-4		The contracting officer shall insert the clause at 52.246-12, Inspection of Construction, in solicitations and contracts for construction when a fixed-price contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may insert the clause in such solicitations and contracts when the contract amount is expected to be at or below the simplified acquisition threshold, and its use is in the Government's interest.
52.246-16	Responsibility for Supplies.	E-5	D-1	46.313 Contracts for dismantling, demolition, or removal of improvements. services involving the furnishing of supplies, or (c) research and development, when a fixed-price contract is contemplated and the contract
52.246-25	Limitation of Liability—Services.	I-92		<p>(a) Contracts that exceed the simplified acquisition threshold. The contracting officer shall insert the appropriate clause or combination of clauses specified in paragraphs (a)(1) through (a)(5) of this section in solicitations and contracts when the contract amount is expected to be in excess of the simplified acquisition threshold and the contract is subject to the requirements of this subpart as indicated in 46.801:</p> <p>(1) In contracts requiring delivery of end items that are not high-value items, insert the clause at 52.246-23, Limitation of Liability.</p> <p>(2) In contracts requiring delivery of high-value items, insert the clause at 52.246-24, Limitation of Liability—High Value Items.</p> <p>(3) In contracts requiring delivery of both high-value items and other end items, insert both clauses prescribed in (a)(1) and (a)(2) of this section, Alternate I of the clause at 52.246-24, and identify clearly in the contract schedule the line items designated as high-value items.</p> <p>(4) In contracts requiring the performance of services, insert the clause at 52.246-25, Limitation of Liability—Services.</p> <p>(5) In contracts requiring both the performance of services and the delivery of end items, insert the clause prescribed in paragraph (a)(4) of this section and the appropriate clause or clauses prescribed in paragraph (a)(1), (2), or (3) of this section, and identify clearly in the contract schedule any high-value line items.</p> <p>(b) Acquisitions at or below the simplified acquisition threshold. The clauses prescribed by paragraph (a) of this section are not required for contracts at or below the simplified acquisition threshold. However, in response to a contractor's specific request, the contracting officer may insert the clauses prescribed in paragraph (a)(1) or (a)(4) of this section in a contract at or below the simplified acquisition threshold and may obtain any price reduction that is appropriate.</p>

				<p>(a) General. The contracting officer shall insert a value engineering clause in solicitations and contracts when the contract amount is expected to exceed the simplified acquisition threshold, except as specified in paragraphs (a)(1) through (5) and in paragraph (f) of this section. A value engineering clause may be included in contracts of lesser value if the contracting officer sees a potential for significant savings. Unless the chief of the contracting office authorizes its inclusion, the contracting officer shall not include a value engineering clause in solicitations and contracts—</p> <p>(1) For research and development other than full-scale development;</p> <p>(2) For engineering services from not-for-profit or nonprofit organizations;</p> <p>(3) For personal services (see Subpart 37.1);</p> <p>(4) Providing for product or component improvement, unless the value engineering incentive application is restricted to areas not covered by provisions for product or component improvement;</p> <p>(5) For commercial products (see Part 11) that do not involve packaging specifications or other special requirements or specifications; or</p>
52.248-1	Value Engineering	I-93	D-10	1. (6) When the agency head has exempted the contract (or a class of contracts) from the requirements of this Part 48.
52.249-14	Excusable Delays.	I-97	D-14	(b) Excusable delays. The contracting officer shall insert the clause at 52.249-14, Excusable Delays, in solicitations and contracts for supplies, services, construction, and research and development on a fee basis, when a cost-reimbursement contract is contemplated. The contracting officer shall also insert the clause in time-and-material contracts, and labor-hour contracts.
				1.(i) General use. The contracting officer shall insert the clause at 52.249-2, Termination for Convenience of the Government (Fixed-Price), in solicitations and contracts when a fixed-price contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold except in contracts for —
52.249-2	Termination for Convenience of the Government (Fixed-Price).	I-94	D-13	<p>(A) Dismantling and demolition,</p> <p>(B) Research and development work with an educational or nonprofit institution on a no profit basis, or</p> <p>(C) Architect-engineer services; it shall not be used if the clause at 52.249-4, Termination for Convenience of the Government (Services) (Short Form), is appropriate (see 49.502(c)), or one of the clauses prescribed or cited at 49.505(a) or (c), is appropriate.</p>
52.249-6	Termination (Cost-Reimbursement)	I-95	D-14	(1) General use. Insert the clause at 52.249-6, Termination (Cost-Reimbursement), in solicitations and contracts when a cost-reimbursement contract is contemplated, except contracts for research and development with an educational or nonprofit institution on a no-fee basis.
52.249-8	Default (Fixed-Price Supply and Service).	I-96	D-13	(a)(1) Supplies and services. The contracting officer shall insert the clause at 52.249-8, Default (Fixed-Price Supply and Service), in solicitations and contracts when a fixed-price contract is contemplated and the contract amount is expected to exceed the simplified acquisition threshold. The contracting officer may use the clause when the contract amount is at or below the simplified acquisition threshold, if appropriate (e.g., if the acquisition involves items with a history of unsatisfactory quality)
52.251-1	Government Supply Sources.	I-98		The contracting officer shall insert the clause at 52.251-1, Government Supply Sources, in solicitations and contracts when the contracting officer authorizes the contractor to acquire supplies or services from a Government supply source.
52.252-2	Clauses Incorporated by Reference.	I-146		(b) The contracting officer shall insert the clause at 52.252-2, Clauses Incorporated by Reference, in solicitations and contracts in order to incorporate clauses by reference
52.252-6	Authorized Deviations in Clauses.	I-147		(f) The contracting officer shall insert the clause at 52.252-6, Authorized Deviations in Clauses, in solicitations and contracts that include any FAR or supplemental clause with an authorized deviation. Whenever any FAR or supplemental clause is used with an authorized deviation, the contracting officer shall identify it by the same number, title, and date assigned to the clause when it is used without deviation, include regulation name for any supplemental clause, except that the contracting officer shall insert "(DEVIATION)" after the date of the clause.
52.253-1	Computer Generated Forms.	I-99		Contracting officers shall insert the clause at 52.253-1, Computer Generated Forms, in solicitations and contracts that require the contractor to submit data on Standard or Optional Forms prescribed by this regulation; and, unless prohibited by agency regulations, forms prescribed by agency supplements.

252.201-7000	Contracting Officer's Representative.	I-100			Use the clause at 252.201-7000, Contracting Officer's Representative, in solicitations and contracts when appointment of a contracting officer's representative is anticipated.
252.203-7000	Requirements Relating to Compensation of Former DoD Officials.	I-101			(a) Use the clause at 252.203-7000, Requirements Relating to Compensation of Former DoD Officials, in all solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items.
252.203-7001	Prohibition on Persons Convicted of Fraud or Other Defense-Contract-Related Felonies.	I-102	F-6		Use the clause at 252.203-7001, Prohibition on Persons Convicted of Fraud or Other Defense-Contract-Related Felonies, in all solicitations and contracts exceeding the simplified acquisition threshold, except solicitations and contracts for commercial items.
252.203-7002	Requirement to Inform Employees of Whistleblower Rights.	I-103			Use the clause at 252.203-7002, Requirement to Inform Employees of Whistleblower Rights, in all solicitations and contracts.
252.204-7000	Disclosure of Information	I-104	F-1		(a) Use the clause at 252.204-7000, Disclosure of Information, in solicitations and contracts when the contractor will have access to or generate unclassified information that may be sensitive and inappropriate for release to the public.
252.204-7003	Control of Government Personnel Work Product.	I-105			(b) Use the clause at 252.204-7003, Control of Government Personnel Work Product, in all solicitations and contracts.
252.204-7004	Alternate A, System for Award Management.	I-106			When using the clause at FAR 52.204-7, System for Award Management, use the provision with 252.204-7004, Alternate A, System for Award Management
					(a) Use the clause at 252.204-7006, Billing Instructions, in solicitations and contracts if Section G includes—
					(1) Any of the standard payment instructions at PGI 204.7108 (DFARS/PGIview)(d)(1) through (6); or
					(2) Other payment instructions, in accordance with PGI 204.7108 (DFARS/PGI view) (d)(12), that require contractor identification of the contract line item(s) on the payment request.
252.204-7006	Billing Instructions	I-107			Use the clause at 252.204-7008, Export-Controlled Items, in all solicitations and contracts.
252.204-7008	Export Controlled Items	I-108	F-1		Use the clause at 252.205-7000, Provision of Information to Cooperative Agreement Holders, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that are expected to exceed \$1,000,000.
252.205-7000	Provision of Information to Cooperative Agreement Holders.	I-109			1 This clause implements 10 U.S.C. 2416.
252.209-7004	Subcontracting with Firms That Are Owned or Controlled by the Government of a Terrorist Country.	I-110			Use the clause at 252.209-7004, Subcontracting with Firms That Are Owned or Controlled by the Government of a Terrorist Country, in solicitations and contracts with a value of \$150,000 or more.
252.211-7005	Substitutions for Military or Federal Specifications and Standards.	I-148			Use the clause at 252.211-7005, Substitutions for Military or Federal Specifications and Standards, in solicitations and contracts exceeding the micro-purchase threshold, when procuring previously developed items
252.211-7007	Reporting of Government-Furnished Property	F-4	F-1		(b) Use the clause at 252.211-7007, Reporting of Government-Furnished Property, in solicitations and contracts that contain the clause at FAR 52.245-1, Government Property.
					(1) Use the clause at 252.215-7000, Pricing Adjustments, in solicitations and contracts that contain the clause at%
					(i) FAR 52.215-11, Price Reduction for Defective Certified Cost or Pricing Data--Modifications;
					(ii) FAR 52.215-12, Subcontractor Certified Cost or Pricing Data; or
252.215-7000	Pricing Adjustments.	I-111	F-5		(iii) FAR 52.215-13, Subcontractor Certified Cost or Pricing Data--Modifications.
					(1)(i) The price adjustment clause at 252.216-7000, Economic Price Adjustment--Basic Steel, Aluminum, Brass, Bronze, or Copper Mill Products, may be used in fixed-price supply solicitations and contracts for basic steel, aluminum, brass, bronze, or copper mill products, such as sheets, plates, and bars, when an established catalog or market price exists for the particular product being acquired.
252.216-7000	Economic Price Adjustment--Basic Steel, Aluminum, Brass, Bronze, or Copper Mill Products.	I-149			(ii) The 10 percent figure in paragraph (d)(1) of the clause shall not be exceeded unless approval is obtained at a level above the contracting officer.

252.219-7003	Small Business Subcontracting Plan (DoD Contracts).	I-112	F-1	1	(b)(1)(A) Except as provided in paragraph (b)(1)(B) of this section, use the clause at 252.219-7003, Small Business Subcontracting Plan (DoD Contracts)--  (1) In solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that contain the clause at FAR 52.219-9, Small Business Subcontracting Plan.
252.222-7006	Restrictions on the Use of Mandatory Arbitration Agreements.	H-1			Use the clause at 252.222-7006, Restrictions on the Use of Mandatory Arbitration Agreements, in all solicitations and contracts (including task or delivery orders and bilateral modifications adding new work) valued in excess of \$1 million utilizing funds appropriated or otherwise made available by the Defense Appropriations Act for Fiscal Year 2010 (Pub. L. 111-118) or subsequent DoD appropriations acts, except in contracts for the acquisition of commercial items, including commercially available off-the-shelf items.
252.223-7004	Drug-Free Work Force.	I-113		1	(a) Use the clause at 252.223-7004, Drug-Free Work Force, in all solicitations and contracts--  (1) That involve access to classified information; or  (2) When the contracting officer determines that the clause is necessary for reasons of national security or for the purpose of protecting the health or safety of those using or affected by the product of, or performance of, the contract.  (b) Do not use the clause in solicitations and contracts--  (1) For commercial items;  (2) When performance or partial performance will be outside the United States and its outlying areas, unless the contracting officer determines such inclusion to be in the best interest of the Government; or  (3) When the value of the acquisition is at or below the simplified acquisition threshold.
252.225-7012	Preference for Certain Domestic Commodities.	I-114	F-1	1	(a) Use the clause at 252.225-7012, Preference for Certain Domestic Commodities, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that exceed the simplified acquisition threshold.
252.225-7033	Waiver of United Kingdom Levies.	I-115	F-1	1	(8) Use the clause at 252.225-7033, Waiver of United Kingdom Levies, in solicitations and contracts if a U.K. firm is expected to--  (i) Submit an offer; or  (ii) Receive a subcontract exceeding \$1 million.
252.226-7001	Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns.	I-116	F-1		Use the clause at 252.226-7001, Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that are for supplies or services exceeding \$500,000 in value.
252.227-7013	Rights in Technical Data--Noncommercial Items.	I-117	F-5	1	(a) Use the clause at 252.227-7013, Rights in Technical Data--Noncommercial Items, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, when the successful offeror(s) will be required to deliver to the Government technical data pertaining to noncommercial items, or pertaining to commercial items for which the Government will have paid for any portion of the development costs (in which case the clause at 252.227-7013 will govern the technical data pertaining to any portion of a commercial item that was developed in any part at Government expense, and the clause at 252.227-7015 will govern the technical data pertaining to any portion of a commercial item that was developed exclusively at private expense). Do not use the clause when the only deliverable items are computer software or computer software documentation (see 227.72), commercial items developed exclusively at private expense (see 227.7102-4), existing works (see 227.7105), special works (see 227.7106), or when contracting under the Small Business Innovation Research Program (see 227.7104). Except as provided in 227.7107-2, do not use the clause in architect-engineer and construction contracts.

252.227-7014	Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation.	I-118	F-5	(a)(1) Use the clause at 252.227-7014, Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation, in solicitations and contracts when the successful offeror(s) will be required to deliver computer software or computer software documentation. Do not use the clause when the only deliverable items are technical data (other than computer software documentation), commercial computer software or commercial computer software documentation, commercial items (see 227.7102-3), special works (see 227.7205), or contracts under the Small Business Innovation Research Program (see 227.7104). Except as provided in 227.7107-2, do not use the clause in architect-engineer and construction contracts.
252.227-7016	Rights in Bid or Proposal Information.	I-119	F-5	(e) Use the following clauses in solicitations and contracts that include the clause at 252.227-7013: (1) 252.227-7016, Rights in Bid or Proposal Information; OR e) Use the following provision and clauses in SBIR solicitations and contracts that include the clause at 252.227-7018: (1) 252.227-7016, Rights in Bid or Proposal Information; OR (b) Use the clause at 252.227-7016, Rights in Bid or Proposal Information, in solicitations and contracts that include the clause at 252.227-7014.
252.227-7025	Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends.	I-120	F-5	(c) Use the clause at 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends, in solicitations and contracts when it is anticipated that the Government will provide the contractor (other than a litigation support contractor covered by 252.204-7014), for performance of its contract, technical data marked with another contractor's restrictive legend(s). OR (f) Use the following clauses and provision in SBIR solicitations and contracts in accordance with the guidance at 227.7103-6(c) and (d): (1) 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends; and OR (d) Use the clause at 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends, in solicitations and contracts when it is anticipated that the Government will provide the contractor (other than a litigation support contractor covered by 252.204-7014), for performance of its contract, computer software or computer software documentation marked with another contractor's restrictive legend(s).
252.227-7027	Deferred Ordering of Technical Data or Computer Software.	I-121	F-5	(b) Deferred ordering. Use the clause at 252.227-7027, Deferred Ordering of Technical Data or Computer Software, when a firm requirement for a particular data item(s) has not been established prior to contract award but there is a potential need for the data. Under this clause, the contracting officer may order any data that has been generated in the performance of the contract or any subcontract thereunder at any time until three years after acceptance of all items (other than technical data or computer software) under the contract or contract termination, whichever is later. The obligation of subcontractors to deliver such data expires three years after the date the contractor accepts the last item under the subcontract. When the data are ordered, the delivery dates shall be negotiated and the contractor compensated only for converting the data into the prescribed form, reproduction costs, and delivery costs.
252.232-7003	Electronic Submission of Payment Requests and Receiving Reports.	I-122		Except as provided in 232.7002(a), use the clause at 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports, in solicitations and contracts.
252.232-7010	Levies on Contract Payments.	I-123		Use the clause at 252.232-7010, Levies on Contract Payments, in all solicitations and contracts other than those for micropurchases.
252.234-7002	Earned Value Management System	I-139	F-10	(2) Use the clause at 252.234-7002, Earned Value Management System, instead of the clause at FAR 52.234-4, Earned Value Management System, in the solicitation and contract.
252.237-7010	Prohibition on Interrogation of Detainees by Contractor Personnel.	I-124		Insert the clause at 252.237-7010, Prohibition on Interrogation of Detainees by Contractor Personnel, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that are for the provision of services.
252.243-7001	Pricing of Contract Modifications	I-125	F-1	Use the clause at 252.243-7001, Pricing of Contract Modifications, in solicitations and contracts when anticipating and using a fixed price type contract
252.243-7002	Requests for Equitable Adjustment.	I-126		Use the clause at 252.243-7002, Requests for Equitable Adjustment, in solicitations and contracts, including solicitations and contracts using FAR part 12 procedures for the acquisition of commercial items, that are estimated to exceed the simplified acquisition threshold.



252.246-7001	Warranty of Data.	I-129			(1) Use a clause substantially the same as the basic or one of the alternates of the clause at 252.246-7001, Warranty of Data, in solicitations and contracts that include the clause at 252.227-7013, Rights in Technical Data and Computer Software, when there is a need for greater protection or period of liability than provided by the inspection and warranty clauses prescribed in FAR part 46.  (i) Use the basic clause in solicitations and contracts that are not firm-fixed price or fixed price incentive
252.246-7001 Alt 1	Warranty of Data.	I-128			(1) Use a clause substantially the same as the basic or one of the alternates of the clause at 252.246-7001, Warranty of Data, in solicitations and contracts that include the clause at 252.227-7013, Rights in Technical Data and Computer Software, when there is a need for greater protection or period of liability than provided by the inspection and warranty clauses prescribed in FAR part 46  (ii) Use alternate I in fixed-price-incentive solicitations and contracts.
252.246-7001 Alt 2	Warranty of Data	I-127	F-1		iii) Use alternate II in firm-fixed-price solicitations and contracts.